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VOL. XLI. MARCH 15, 1913, NO. 6.

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VOL. XLI.

MARCH 15, 1913.

NO. 6

Editorial

IOWA FOUL-BROOD LAW; ATTENTION, IOWA BEEKEEPERS!

THE beekeepers of Iowa are trying to get appropriations for their foul-brood law. It seems they had a law passed, but it carried no appropriation. Every beekeeper in Iowa is requested either to see or write to his Senator or Representative at once, and explain the great need of an appropriation for the foul-brood law already on the statute-books, but which is practically non-operative by reason of no money for carrying on the work of inspection.

SENDING BEES WITHOUT COMBS.

WE must again caution beekeepers against trying to send bees by parcel post. From the amount of correspondence that has been coming in, many people appear to be getting wild about shipping bees without combs. They either do not take GLEANINGS or fail to read our repeated admonitions, and send bees in any kind of box by parcel post. As not all postmasters have read the parcel-post regulations, some of them accept packages of bees in the mails; and if this continues we are liable to have even queen-bees barred. Sending bees in pound packages is a science. We are perfectly willing to tell beekeepers how to do it if they will write us.

A FRUIT-GROWER WHO KNOWS WHAT HE IS TALKING ABOUT.

ONE of our subscribers, Mr. Elias Fox, of Union Center, Wis., has called our attention to the following clipping from *The Fruitman and Gardener*, published at Mt. Vernon, Iowa, taken from their January "Special Spraying" issue:

Never use poison sprays when the fruit trees are in bloom. Just before and just after is the time for spraying.

You injure rather than help your crop by spraying during bloom. Those few days are sacred to the work of pollination.

And the bees, your best friends in that work, must have a clear field. It is adding cruelty to folly to kill your friends at the moment they are doing you a good turn.

Mr. Fox wishes that all journals devoted to fruit-growing in the country would copy

this. We, too, wish that they would, for the item, though short, is right to the point. As it comes from a journal not especially prejudiced in favor of bees, it has all the more weight.

BEE INSPECTION IN CONNECTICUT: A LARGER APPROPRIATION NEEDED.

ACCORDING to that part of the report of the Connecticut Agricultural Experiment Station having to do with bees, we note that the two inspectors, A. W. Yates and H. W. Coley, made an effort during 1912 to inspect those portions of the State not previously covered in this work. European foul brood was found in Litchfield, Norwich, and New London counties.

The appropriation in the States is only \$300, so it is impossible to cover all the ground in one year. At the last convention, however, beekeepers voted to ask for an increased appropriation, and also for certain changes in the law which will make it possible to inspect without complaint, and to place a quarantine upon diseased apiaries. Another change asked for is that a certificate of good health be required to accompany every shipment of bees, whether brought into the State from without or moved from one point to another within the State.

The inspectors barely kept within the appropriation, the total cost of the year's work amounting to \$299.80. The average cost of inspection per colony was 21 cts. Fourteen hundred and thirty-one colonies were inspected in 153 apiaries, and 337 colonies were found diseased with European foul brood in 73 apiaries.

WINDBREAKS AND WINTERING.

WE wish to indorse as heartily as we can the statements made by Mr. Byer, on page 181, of this issue, on the subject of natural windbreaks versus board fences. As we have said before, we believe suitable windbreaks are almost as important factors in wintering as packed double walls. The best-sheltered location—indeed, one that is ideal, in our opinion—is one that is surrounded by low shrubbery or trees—enough so as to

break the force of the wind. When a solid board fence is used, the wind glances upward, is caught by the onward current, bounds downward, hitting one or more rows of hives, with the result that such row will suffer a much greater mortality than the others.

CARELESSNESS IN GRADING.

A SHORT time ago we received a letter from a prominent dealer in New York handling honey, butter, cheese, eggs, etc., complaining in regard to the way in which most producers grade their honey. We give herewith a part of the letter referring to this matter:

There are very few producers of honey in New York State who grade their honey honestly. It is to be regretted, but it remains a fact just the same; and we are unable to make any impression on the graders and producers by any thing that we can write them. Most graders seem to think it is the proper thing to work off a certain percentage in their No. 2 honey in their No. 1 grade, and they do not stop to realize that, by packing their honey in that way, they lose money by doing it.

We doubt whether the producers should be called dishonest, for we think it is more often carelessness or ignorance that accounts for the improper grading. It is, of course, a serious matter; for, from the standpoint of dollars and cents, it means a distinct loss to the producer when his grading is badly done.

THE NEW FOUL-BROOD BILL BEFORE THE LEGISLATURE OF MICHIGAN.

THE beekeepers of Michigan are trying to get a foul-brood law that is more effective than they have had in the past. Every beekeeper in Michigan should immediately write to his Senator and Representative asking for his unqualified support to the bee-disease bill (House bill No. 343) that is now pending before the General Assembly. Explain that bee disease is rapidly spreading all over the United States and Canada, and that it is very necessary that the State of Michigan should have a law that will protect her against the inroads of the disease from other States. Prompt and decisive action on the part of all the beekeepers of the State should be taken at once. The States bordering have much better laws, and it is high time that Michigan should have as good a law as her sister States.

DOUBLING THE STRENGTH OF COLONIES DURING MIDWINTER.

WE would call attention to an interesting article by G. T. Whitten, in this issue, on the subject of building up colonies indoors by feeding, and providing a means for flight in a wire-cloth cage. Years ago A. I. Root

succeeded in making colonies in a greenhouse rear brood during cold weather. The bees finally learned to fly out and go back to their hives. While, of course, some were lost, yet brood-rearing continued. Mr. Whitten may have made an improvement in that he uses a small wire-cloth cage into which the bees may fly—so small indeed they may then go back into their hives. Although he does not say so, we take it that at such times they void their feces.

While we do not believe it would be practical for every one to rear brood under the conditions named in Mr. Whitten's article, yet it might be possible for small beekeepers to save a few of their colonies having a mere handful of bees each. The thing is worth trying, for the amount of fuel required would not be large. When there is only one colony, the living-room might be used; but if there are a dozen, a room would have to be prepared with suitable means for ventilation.

We shall be glad to get reports from any of our subscribers who have tried out this plan; and in conclusion we may venture to suggest that not many will be able to succeed as well as Mr. Whitten has done.

THE EFFECT OF SUGAR IN EXCESSIVE AMOUNTS ON THE HUMAN SYSTEM.

IN the January issue of *The Technical World Magazine*, page 516, is an article by Bailey Millard entitled "Our Great Sugar Debauch." We wish every one of our readers might secure a copy for the purpose of reading this article, for it is an astonishing revelation of the enormous quantity of sugar consumed in the United States, and of the bad effect which this excessive use of sugar has on the system. We are prejudiced, of course; but in our opinion the writer should have offered as a solution the substitution of honey for so much sugar. However, even as it stands, the deleterious effect on the health is evident.

The opinions of specialists are quoted, showing that "The bad effects ascribed to sugar as a food are due to its use in larger quantities than three to four ounces a day.

. . . The average person eats about three times as much cane sugar as he should."

. . . "Many a factory girl and department-store saleswoman makes her entire luncheon from starchy wheat cakes swimming in *maple, cane, or corn* syrup, and no other dish." The unfortunate girls who work in the candy-factories "are not a healthy-looking lot; and, though plump enough, they are pale of cheek and listless of eye. Sugar inebriates all, with bad stomachs and bad livers."

Referring to the candy sold in shops, the writer says that of 250 samples bought for examination by government chemists "not one was found to be pure, and nearly all had either aniline or coal-tar colors, glucose or terra alba in them, while many had all of these valuable(?) food elements. Even if all candy were pure—that is, if it were composed wholly of sugar, mixed or coated with other edible constituents—it would be unsafe for the average child to gorge himself with it."

Some sound advice is given along the line of allowing children to gratify their natural craving for sugar by eating such foods as dates, figs, prunes, etc.; and we wish that honey had been included; for it is a fact that, perhaps, no scientific man will deny that honey, being an invert sugar—that is, grape sugar—does not have the deleterious effect on the health that cane sugar does, whether made of the sugar cane, sugar beet, or maple sap.

SACBROOD AN OLD BROOD DISEASE UNDER A NEW NAME.

For many years back there has been recognized a form of dead brood under the name of pickled brood that is neither European nor American foul brood. It comes and goes at certain seasons, but is never a destructive agent like either one of the old foul-brood diseases. Sometimes it has the appearance of foul brood so far as color is concerned; but it is never ropy like the American type; and while similar to the European type it seldom gets very much headway in a colony. For some years back, Dr. G. F. White, Expert in Bacteriology in the Bureau of Entomology, under Dr. E. F. Phillips, has been studying this peculiar disease; and the result of his investigations as given in Circular No. 169, Bureau of Entomology, show that it is not a fungous disease, as was supposed by Dr. Wm. O. Howard, of Texas, but is due to some other cause. It will be remembered that Dr. Howard attributed the cause to a fungus, to which he gave the name *Aspergillus pollini*. He then suggested the name "pickled brood," which was adopted.

It is mildly contagious, and the infected larvæ turn yellow and then brown. Sometimes the color is gray. The dead specimens may be in unsealed cells, but are generally in the sealed ones. The dead larvæ, says Dr. White, are "almost always extended lengthwise in the cells, and lying with the dorsal side against the lower wall. . . . The form of the larvæ dead of this disease changes much less than it does in

foul brood. The body wall is not easily broken, as a rule, and on this account often the entire larva can be removed from the cell intact." . . . "When removed they have the appearance of a small closed sac. This suggests the name of sacbrood."

The only objection we find to the name is that it may be often confused with black brood, which is still very largely used, especially by those in possession of the older literature on bee diseases. In ordinary discussions in convention the word sacbrood can be very easily confused with black brood; and our own stenographers have repeatedly in our letter-writing confused the terms and substituted the wrong one.* However, this is a matter that will correct itself as time goes on.

CAUSE OF SACBROOD.

So far no microbe or fungus has been discovered as the cause of the disease. Whatever it is, it is so very small that it will pass through a Berkfield filter. Sick and dead larvæ of sacbrood have been macerated and diluted with sterile water. The product was then passed through a Berkfield filter; but it was found that the filtrate would transmit the disease to a healthy colony. Colonies fed with this filtrate would again give the disease to other colonies. It is evident that the disease is contagious. Dr. White concludes "that sacbrood is an infectious disease of the brood of bees caused by an infecting agent that is so small or of such a nature that it will pass through the pores of a Berkfield filter."

This led us to the conclusion that the foul-brood inspectors of the country might be compelled to quarantine an apiary where sacbrood might be found; but in talking with Dr. E. F. Phillips, of the Bureau, afterward, he said he did not think that this would be necessary. The disease at its worst is not very destructive; and when it does make its appearance it affects so few larvæ in a colony that it need cause no great alarm on the part of the beekeeper. While he would advise treating or isolating colonies, he did not believe it would be necessary to quarantine an apiary where it was found.

We are informed that this circular will be followed by a bulletin in which the disease will be treated more fully. Copies of this circular can be obtained by applying to the Superintendent of Documents, Government Printing-office, Washington, D. C., and inclosing five cents per copy. Ask for Circular 169, Bureau of Entomology.

* Indeed, our oldest stenographer got the names wrong in taking down this very editorial. The ear scarcely catches the difference.

Stray Straws

DR. C. C. MILLER, Marengo, Ill.

I LIKE that March 1 number. Seems more homelike with so many women-folk around.

THE man with an out-apiary has the special advantage that he can take a colony from one apiary to the other and break it up into several nuclei without any precautionary measures to make the nuclei stay where they are put. [Right you are.—Ed.]

WOMENFOLK do all the work in the hive, while the male members are dead-beats. That would make it seem the appropriate thing that beekeepers should be women; whereas they're nearly all men. Is this another of the cases in which women have been denied their rights all these years?

A CITY daily advises boiling three pounds of sugar syrup with one of honey, and says a great many people like it better than honey "because of the absence of honeycomb, which is dissolved." Now, there's a hint for the United States government, which is having a lot of trouble trying to dissolve certain trusts. Just boil the trusts in three parts sugar and one part honey, and they will be "dissolved."

"UNDER the Colorado rules, the sections must not weigh more than a certain minimum nor more than a certain maximum," p. 140. I suspect you mean *less* than a certain minimum, but where do you get any thing about a maximum? [Yes, certainly, we accept your correction. Where do we get maximum? From the Colorado rules. Later. They looked it up. There is no maximum. The joke is on us.—Ed.]

THE women of several of the large cities took in hand the egg-market, with the result that eggs were bought at 24 cents a dozen by people too poor to pay the previous high prices. Now Chicago women have hammered down the price of apples from 6 cents to 2½ cents a pound. When they get around to it, it would be a glorious thing if they would hammer down the price of honey so that ill-nourished little kids who never taste honey might get an occasional meal of it. "That would lower the price to the beekeeper?" Not a bit of it. It would, if any thing, work the other way by increasing the consumption. The farmers didn't get any less for their eggs and apples because the women butted in. Even if it should bring the beekeeper less, the honeyless kids outnumber the beekeepers.

I'm glad to see that Byer-Root scrap started about feeding honey or sugar syrup, pp. 138 and 141. I hope it will be fought

out to a finish, and that, when the finish comes, we'll know more than we do now. But when you're talking about syrup, are you both talking about syrup of the same strength? and do you mean one part sugar to one part water, or 2½ parts sugar to one part water? That's right—make that Kanuck show the proof for what he "knows." It's none of my funeral, but I'm here to remark in a cautious way that I suspect that a pound of good honey is worth more for bee food than a pound of the best sugar in the world. [Do you mean for brood-rearing or wintering? You do not say. If for the former, we would agree with you; but if for the latter, we should have considerable doubt. In talking about the relative values of food for bees, we must not fail to specify the conditions.—Ed.]

ELIAS FOX, you think the pain is just as great when the sting is promptly removed as when the sting is left in the wound, p. 116. You're right that a sting between the shoulders is something fierce; but might it not be still worse if *not* removed? When the sting is left, does not the poison-sac remain with it, and does not the poison continue to be pumped in for some time? You ask if any one was ever stung by a queen. I never was; but just once in my life I saw a queen sting a worker. [Our experience is that a sting is much more severe if left in the wound than if removed immediately. In the case of a novice or a person who is not accustomed to the effect of the bee-sting poison, the swelling and local fever are, we should say, ten or twenty times more severe. A few years ago, we received what proved to be nearly a "knock-out blow." A bee stung us on the eyelid, under our glasses. The eyes were so suffused with tears that it was impossible to get the sting out. Although there was no swelling, we never received a sting that was more painful. We have been stung many and many a time on the eyelids, without very much discomfort where the sting was removed immediately. As Dr. Miller says, when the whole contents of the poison-sac are allowed to get into the wound, the effect is in proportion to the amount of poison that gets into that wound. The yellowjacket or hornet, if we are correct, does not leave its sting in the wound, and this sting is a mere prick; but the sting from the bee is, in most cases, left in its victim, and so the sting keeps on doing its work, even though the bee itself is smashed.—Ed.]

SIFTINGS

J. E. CRANE, Middlebury, Vt.

We are still greatly interested in the cheap shipping of bees without combs, and expect great things are yet to come out of it.

* * *

One of the best things I have ever seen on the subject of feeding back extracted honey in order to secure comb honey is furnished by friend Doolittle on page 44, Jan. 15. It is all there, and all right.

* * *

Those Germans do some original thinking or they would not be supplying their soldiers with tubes of honey while on the march. If it is good for German soldiers it is good for most people engaged in hard or laborious pursuits.

* * *

I read with pleasure of Mr. Chadwick's efforts, at the California State convention of beekeepers, to learn whether alfalfa produces honey of different colors, p. 48. I formerly thought there could be no difference; but after having white-sage honey offered us of a decidedly amber color, and with scarcely a trace of sage flower, and alfalfa that was dark in color and of doubtful flavor, I concluded that "locality" must play a part in the production of honey, of which I had no conception.

* * *

Mr. A. B. Marchant, Jan. 15, p. 45, gives some facts of immense importance to the beekeeping fraternity about the value of pollen in building up weak colonies. We of the North, where pollen is so abundant, have been accustomed to think of honey as a most important item in stimulating bees to rear brood. But it seems that the bringing in of pollen is quite as important. In the North we used to feed rye meal or buckwheat, sometimes in early spring, and we know bees will take it with great eagerness. I wonder if any one has ever tried it in localities where pollen is scarce, and yet the supply of honey is abundant.

* * *

Friend Doolittle, will you please sit up and take notice, for I have somewhat to say to you? In GLEANINGS for Dec. 1, p. 759, you appear to be laboring under so many misapprehensions and misunderstandings that your statements would appear to be very misleading. In a former number of GLEANINGS you took up the subject of finding black queens during a time when robbers are bad. In GLEANINGS for Dec. 1 you say, "After reading this, Mr. Crane wrote,

page 615, Oct. 15, 1911, 'Hello, friend Doolittle! I want to know if you can do that for an hour, when no honey is coming in, without music about your ears in the key of seven sharps.' Yet we have here been finding them this season for many days, sorting out the old or defective ones with great rapidity. We use a queen-sieve, and are not troubled by robbing." You say that the first thing to attract your attention in reading this was that "friend Crane would have the readers of GLEANINGS think that he uses only black and hybrid queens." Beg your pardon, not at all. I would have the readers of GLEANINGS think that, when I have mismated queens or black queens, as we sometimes do after buying in a new yard, we would sort them out as we have time or opportunity, and replace with pure young queens.

Again you say, "The next thing to take my attention was that the editor of one of the departments in GLEANINGS should put off hunting out 'his old and defective' queens until a time of scarcity of nectar had arrived in the fall." Will you please put on your spectacles, my good friend, and read just what I did say? You will see that I said, "We have been finding them *this season* for many days." Nothing was said about the fall. The season of scarcity during 1911 was pretty much all summer. But, again, you say, "But to allow the beginner to believe that a time of scarcity is the best time to supersede old poor failing queens is something hardly admissible in the columns of a paper like GLEANINGS." If you will adjust your glasses once more and read what I said, you will, I think, see that I said absolutely nothing about the best time to supersede old or worthless queens. I referred, as you did, to a time when bees are inclined to rob.

In the fourth paragraph of your department you try to prove that *black* queens can be looked up in a season of scarcity of nectar without danger of stings or robbing if they have been properly handled and managed, by saying that you often work from 10 A. M. to 2 P. M. without robbers or stings at such times, and yet you have already told us that you have no black bees.

In writing as I did I simply desired to call attention to a very simple and effective device that I had found very useful in finding queens when colonies were strong and nectar scarce. In the spring, while colonies are not very strong, it may not be of as much service.

Beekeeping in California

P. C. CHADWICK, Redlands, Cal.

A rosy hue has begun to make its appearance on the prospects of the season, for just now we are enjoying an old-fashioned wet spell that makes the heart of the California beekeeper glad. Four and one-half inches for the past 24 hours (Feb. 24) is the report from Los Angeles, though at this place we got but half an inch. The sage seems to be damaged in the interior foothill region much worse than nearer the coast; in fact, Mr. M. H. Mendleson, of Ventura, tells me it is not injured in that vicinity. The prospect for orange bloom is fine at this time, as the buds are starting in almost the usual quantity.

* * *

I am in receipt of a section of comb honey by parcel post from Paul Hunter, of Somerset, Col. The tin section, with its neat covers, makes a handsome and durable holder that stood the trip through the mails, arriving in perfect condition. I am of the opinion, however, that the package is too expensive for common use, and will not displace the wooden ones very fast. Mr. Hunter has demonstrated to my entire satisfaction that these packages will stand the knocks received in the mails, yet the postage on the one section was 16 cts., which would make the delivery by parcel post prohibitive, at least beyond the first zone.

* * *

A meeting of the executive committee of the C. S. B. A. was called at Los Angeles on the 12th of February. Final action was taken on the matter of publishing an association journal. It is to be about the size of the *Beekeepers' Review*, to be issued monthly, and its name will be *The Western Honeybee*. Mr. Geo. L. Emerson, of Los Angeles, is the editor. The committee on marketing, which is composed of the presidents of affiliated clubs, elected Mr. T. O. Andrews, of Corona, chairman, and Mr. C. Hauser, of Sacramento, secretary. The matter of establishing retail markets was left for future action. The purchasing of cans and cases was under consideration, but no definite action was taken, though plans were given out that indicate the association will be able to get cans at a good reduction, and cases in the flat by the carload at a very low figure, making the combined cost a substantial reduction over last year's prices.

* * *

Mr. Editor, I read "Subscriber's" article on p. 59, Jan. 15, and was beginning to get

rather warm until I saw your comment at the end. That soothed me somewhat, but I want to come to the defense of our beekeepers with a few more remarks. "Subscriber" seems to be sore at the entire beekeeping fraternity of this State, and all because of the treatment from one man. He received \$30.00 per month with no experience, which is farm wages, and the green hand is dear at that price in the bee business. The average bee-ranch is not within reach of butcher-shops, and he is lucky to get fresh meat at all. He was *very* lucky in not having to do his own cooking and to clean up his own dirt. The average native would rather sleep out of doors than in, and blankets are considered all that is necessary. I have slept that way many a night, and have enjoyed it. The California beekeeper, on the average, is no worse than any other class of men anywhere else.

* * *

I want to harp a little more on the matter of our exhibit at the Panama Pacific Exposition. As I am secretary of the exhibit committee, much of the work of getting the means together, with which we expect to make the finest exhibit of the kind the world has even seen, will fall on me. I want to say at the beginning that this is not to be in any sense an association affair, but an exhibit of the beekeepers of the State of California. The State Association has taken the matter up to push it through, as it is necessary to have an organization to work through, and to whom those handling the funds are responsible. The plans the exhibit committee have under consideration are of immense proportions and will require much honey, wax, and money. We must have liberal support to be able to complete the plans we have under consideration. Every beekeeper in the State will confer a favor on the exhibit committee if he will notify me at the earliest possible time just what quantity of honey they are willing to donate, let it be any number of cases; or if it is preferable for some to give cash we want to know the amount we can figure on for the work. There are expenses to be met almost immediately in order to get the details worked on time and the work started.

Every beekeeper can also donate some wax, and of this we shall need all we can get. If you are a member of an affiliated club, give your pledge to the secretary of your club. Others who will help, please write direct to me. Get busy, boys. We *must* make a success of this.

Conversations with Doolittle

At Borodino, New York.

MAKING THE BEST OF A SHORT HONEY-FLOW.

"In our locality the honey season is very short, and I wish to know of some plan by which I can get into the supers the most of the honey which comes in during the week or ten days of the honey-flow, without wasting any of it in brood-rearing."

"It will be necessary for you to have plenty of stores for feed during the spring months, so that brood-rearing can go on rapidly, that the combs may be well filled with brood, and the hive well filled with bees when your short flow commences."

"An old beekeeper advised me to make a syrup to feed the bees by mixing sugar and water in equal proportions for feed, so that the combs might be filled with this syrup at the beginning of the harvest, except that part filled with brood. In this way, he said, when nectar comes in from the fields it would have to go into the sections, as there would be no other place for it to be stored."

"Did he think that would be better than to have an abundance of honey stores in the combs?"

"He seemed to think so, for he said it was advisable to feed all the colonies, as those that already had enough food would be stimulated by the feeding, and, as a consequence, would commence raising a lot more brood than they otherwise would. This would mean a host of young bees at the right time; which in turn would mean a big crop of honey from my short bloom. He said that many of the beekeepers of the United States who lived in localities like mine could just as well be getting quite a surplus, and no little money from it, as to be going along on the old plans of securing little or no surplus with nothing but bees for winter. And, often, such a locality would have a downpour of honey, in which case the hives, if filled with capped sugar stores, and just fairly boiling over with bees, would have no room for the big flow except in the supers where it is wanted."

"Well, that sounds well. But did he say any thing about the cost and labor necessary for such a procedure?"

"That was a point I brought up; but he met it with the fact that farmers think nothing of feeding their stock, except to get returns. He claimed that the one who would say he could not afford to feed his cows well because of the cost of the hay and grain that he would feed them would be considered a fool indeed."

"Suppose, however, that you can secure the same result by carrying over combs of

honey from the previous year, what is the object in buying sugar and feeders, and going through with all of this multitudinous labor of feeding every day for six or eight weeks?"

"I hinted at this; but he said that the one who depended upon the bees having enough stores to carry them through to the honey harvest properly, generally found that their *enough* proved so little that the bees would scrimp and economize, so that their stores might be made to last. In this way, he argued, brood-rearing would be cut down; and when the season opened, the hives would have few bees, but little brood, and plenty of empty comb in which to store the first honey which came in from the fields."

"Well, I have to confess that your man, whoever he was, was a good talker; and if it were not true that there are some obstacles in the way of carrying out this plan he would have an argument that it would be hard for any of us to get around. One is the fact that only as you have the most prolific queens will the brood-rearing be kept up at the maximum where every-day feeding is resorted to for weeks in sufficient quantities to stimulate brood-rearing. With nine colonies out of ten, the bees would begin to crowd down the queen by storing too much of the feed, in which case there would be few bees in the hive and very little brood. The sealed honey above and about the brood would be so great that the average strain of bees would not cross over this vast amount of honey to store in the sections even the little which the bees would gather; and the result would be that, instead of a big crop of honey, that coming in from the fields would be still further used to crowd out the brood. When winter arrived, the cluster of bees would be too small to survive, especially if the colony were wintered out of doors."

"Then, too, if everything worked as you were told, and lots of bees were obtained to take advantage of the sections as soon as the flow of nectar commenced, these combs of sugar syrup would soon largely give place to combs filled with brood, as both queen and bees are more largely stimulated with nectar coming from the fields than they are with sugar syrup coming from a feeder. In this way queens which are good enough to keep up the maximum amount of brood under feeding sugar syrup would make a gain as soon as the nectar began to come in from the fields, and the sugar syrup

Continued on page 176.

Beekkeeping in the Southwest

LOUIS SCHOLL, New Braunfels, Texas.

"BULK COMB HONEY" OR "CHUNK HONEY;"
WHICH AND WHY?

Our reason for insisting on the name of "bulk comb honey" for the product as put on the market, here in Texas principally, is to distinguish it from section comb honey on the one hand and old-fashioned "chunk honey" on the other. It can no more be put in the place that chunk honey used to occupy than extracted can be put in the place of the old-fashioned "strained honey."

It is hoped that these various names will soon be understood by the beekeepers of the world. It is of no use to criticise "bulk comb honey" nor the use of the name itself. The two have become so well established, and this kind of honey is produced in Texas to such an extent, that it will be impossible to blot it out. The demand for this kind of honey, for "bulk comb honey," and not "chunk" honey, is so great and so firmly established that this alone will maintain a place in our Texas beekkeeping, to be filled by those who will produce it if others will not.

There should not be any objection to the Texans claiming "bulk comb honey" as originating in Texas and being a Texas product. It is too well known that we Texans were the first to resort to the *up-to-date method of producing and putting on the market this kind of honey known as bulk comb honey*; and the mere fact that almost the entire Texas crop is in this form, and especially since the Lone Star State produces no little crop is justification enough to permit it to claim credit for being the home of bulk comb honey. It is simply different from "chunk honey" of long ago.

* * *

WORK FOR MARCH.

It is a splendid idea to have every thing in and about the apiaries, and also in the workshop and honey-house, nice and clean, or "in apple-pie order." This makes a much better appearance in the first place, and helps to make the season's work much more pleasant and agreeable. With the yard cleaned of rubbish, and the trees trimmed to a proper height, the usual obstructions are out of the way, and save a good deal of vexation. A whole lot more work can be done. Especially is this true if every thing is in its place, in the workshop as well as in the other places where the beekeeper has to do his work.

Of great importance is the matter of "spring cleaning" the interior of every

hive of bees. Scraping off the burr-combs, propolis, and fixing up and repairing hives, supers, frames, bottoms, and covers, as well as any broken or misshaped combs, should be done early in the spring. This makes all future manipulation very much easier and more rapid. It seems, also, that the bees of colonies treated in this manner will do better. Since the combs are manipulated as they are being scraped, as we take each one out of the hive, it stirs up the activity of the bees—especially so if much sealed honey is bruised.

It is necessary, of course, that all this work in the hives be done when we have warm weather. It is also necessary to replace the combs as they were taken from the hives, or put them back in such order that the brood-nest will not be disturbed too much.

During the "spring cleaning" we have the best opportunity to remove all unnecessary drone combs and any other combs that are not in first-class condition. It is far better to melt these into wax, and exchange for full sheets of foundation in every frame replaced. It is good practice to "patch up" worker combs after the drone comb is cast out of them, by replacing this with worker comb from other frames. The time required to look after the combs each spring pays well, and should not be overlooked. It is very unprofitable to rear drones in any numbers, and just as much so if we allow crooked or ill-shaped combs in our hives. Every square inch of worker comb put in place of the other will mean just that much more profit to the beekeeper.

All the needed supplies should have been prepared during the winter; and if not already done, foundation should be placed in the first rounds of the supers early enough so that this may not interfere with other work coming on a little later. I do not advocate putting foundation in all supers very far ahead of the time when they will be actually used, since the foundation becomes quite hard, and will not be accepted by the bees quite so readily. I have found that they prefer the fresher foundation.

Continued from page 175.

would be removed to give place to this brood, going into the sections with the nectar from the fields. As a result we should be liable to come in contact with the pure-food law which we beekeepers have been praising since it was enacted."

General Correspondence

RIPENING HONEY ARTIFICIALLY

The Great Majority of Authorities Advise Against the Practice

BY OREL L. HERSHISER

This subject has come in for a good deal of discussion ever since the introduction of the honey-extractor, the latest contribution being that of Mr. I. Hopkins, page 801, Dec. 15, 1912. Advocates of extracting unripe honey practice this for the twofold reason of greater quantity with less labor. The time otherwise spent in uncapping is saved, and the honey is thrown out more quickly and thoroughly because of its thin and watery condition. But the honey thus produced did not and does not meet with favor from the American customer. Some years ago prices of extracted honey became depressed to a point of little or no profit to the producer of the better grades, and there is no doubt that the production of so much unripe honey had more to do with that condition than all else. The writer knows something about it, as he lost a good 2000-pounds-a-year customer by supplying a thousand pounds of fine-looking and apparently ripe basswood honey purchased from another beekeeper, but which, evidently, had been extracted before it was all capped, as it fermented and outgrew the capacity of the pails. What appeared to be the source of profit to the uncapped-honey producers—greater quantity—proved to be the cause of loss, for there could be no profit in quantity when it was more than neutralized by diminution in price. That unripe honey has had and will ever have a depressing effect on the market; and that unprincipled dealers have used and will ever use it as a club to hammer down the price of high-grade honey ripened on the hive can not be successfully denied. For what distributor of honey that has been ripened on the hive, whether apiarist or dealer, has not been adversely affected by unfair competition with unripe honey? If the principle of "greatest profit for the labor" had been strictly adhered to, instead of "greatest quantity for labor," I believe we should all now be getting better prices and profits from our apicultural investments.

Mr. Hopkins observes, "We all know how strongly the ripening of honey anywhere but within the hive has been opposed at different times," and it is within the facts to add that that opposition is growing stronger and sharper from year to year.

Mr. Hopkins cites several prominent authorities in support of his contention in favor of ripening honey outside the hive. Of these, our beloved Quinby died in 1875, and the honey-extractor was not invented until 1868, and probably did not come into even limited use for a year or two later. With that profound reverence that every American beekeeper who is familiar with the fountain heads of his occupation feels for Moses Quinby it does not seem that he could have so attained to that ripeness of experience on this point as to make him a leading authority. It is idle to speculate as to what might have been his ultimate opinion on this point had he lived to mature experience; but it is proper to say that some of the early advocates of the ripening outside the hive later changed their minds.

Mr. L. C. Root has not been extensively engaged in apiculture for about 25 years, but he retains his interest in the subject and in beekeepers. He was present at the convention of the National Beekeepers' Association, Albany, 1910, and entered heartily into the discussion of many subjects. A very able paper from Mr. W. P. Southworth, of Salix Falls, Iowa, on the subject of "Ripening Honey on the Hives," was read at the convention. Mr. Southworth is the manager of an association of beekeepers called "The Western Honey-producers," an association whose annual output reaches 200,000 pounds. He pointed out that ripening honey on the hive is the best method of producing honey that would "taste like more;" that it is not enough that honey be entirely sealed in the comb to be ripe and ready for market, but that it should age on the hive; that the extracting process causes the honey to take in the ferment germs that attack the particles that are not thoroughly inverted or changed from nectar to honey; that he had read the articles written by E. W. Alexander and others on extracting, often during the season, and their methods of artificial ripening, and that he had considered what constituted honey, and would refer to the bulletin published by the Agricultural Department at Washington, D. C., entitled "The Chemical Analysis and Composition of Honey;" that he admired E. W. Alexander, and had studied his writings, and found his methods suitable, with one exception, and that was his method of extracting the nectar from the combs before it was sealed or even well evaporated; that in his location (Iowa), and with the equipment that the average and even extensive beekeeper has, he believes the plan is worse

than a failure; it is a damage to the honey market; that no honey-producer should attempt it unless he wants to enter quite extensively into the manufacture of honey vinegar, and doubts if the nectar would make as good vinegar as ripe honey would; that the all-important question to the consumer is, the flavor of the honey he is eating; and if we want him to eat more honey we must give him the thick delicious honey with the bouquet of the flowers in it; and we can not get this from nectar, nor can man ripen the nectar so that it will be equal to the honey that the bees have finished.

Mr. Southworth's views were sustained in the discussion that followed the reading of the paper, and neither Mr. L. C. Root nor any other member spoke in favor of ripening honey outside the hive.

At the Harrisburg convention of the National Beekeepers' Association, 1907, there was a question by H. Ballou, "Can you get more honey per colony by frequent extracting of the combs during a honey-flow than by tiering up supers with full combs?"

Answered by E. W. Alexander: "Yes, I think we can get nearly twice the amount; but you will require some large tanks for ripening it thoroughly before it is barreled. We make it a point to extract just when the bees commence to cap it. We seldom have any surplus except buckwheat and goldenrod, and occasionally some basswood. We find it a great improvement on the honey from these flowers to keep it in the tanks about two weeks so it will lose a part of the strong odor and unpleasant flavor it has when first extracted. It gives much better satisfaction, and sells far more readily, than if it were barreled up as soon as extracted. I know that any honey that has a strong disagreeable odor and taste is much improved by being exposed to the air a short time."

In the further discussion of this question the writer expressed admiration for nearly all of Mr. Alexander's doctrines; but as to this one of teaching the advisability of extracting honey before it is capped he entered a protest. He pointed out that it might be all right for Mr. Alexander, but that he was answering a question that goes to the beekeeping world; that if we teach beekeepers that honey can be extracted and ripened afterward we shall have about nine-tenths of them not ripening it afterward. The gain in quantity would not be sufficient to compensate for the loss in quality. The writer stated that he himself was interested in producing honey that was as good as the bees could make it.

The president, Mr. Aspinwall, seemed to have a little preference in favor of ripening outside the hive, especially for so skillful a beekeeper as Mr. Alexander, expressing the belief that the gain in quantity was greater than the loss, but said it was right to "warn people against promiscuously doing that sort of thing." Upon inquiry by the President, if there were any artificial processes given in the A B C and X Y Z of Bee Culture, Mr. E. R. Root answered, "These are all out." It may be remarked here that this answer is very significant as showing that it is considered unwise to teach or in any way encourage the ripening of honey outside the hive.

Mr. Selser, a very extensive producer and distributor of honey, and a widely known expert analyst and judge of honeys, having performed extensive and numerous services for the United States government, in that line, said, "I should like to have it go out from this convention before the United States that we do wrong in evaporating honey in tanks instead of letting the bees do it in the ordinary and natural way."

Mr. Holtermann, one of Canada's larger producers and best authorities, expressed admiration for many of Mr. Alexander's writings, but thought him entirely wrong upon this question of taking out honey in the condition in which he speaks of; that *he* can't do it, and manage the way he says he does; for a man who has a stock of bees with the large worker force he speaks of, and has one extracting-super on the hive, can't extract before the honey is capped, and have that honey all in the condition where it is just ready to seal. In a good buckwheat flow we all know that a stock like that can, in one week's time, fill a twelve-frame super. Mr. Holtermann considered Mr. Alexander's mistake in using only one extracting-super. If he would use two or three he would not be able to say that he could get nearly twice the amount of honey by extracting before it is capped.

Finally it was moved by the writer "that it is the sense of this convention that the throwing of unripe honey upon the market, or taking off honey before it is capped—in other words, curing it artificially—is a detriment to the beekeepers of this country." This motion was duly seconded and carried. Of course, it is understood that, at the sudden termination of a honey-flow, there will necessarily be considerable uncapped honey in the supers where an abundance of room is given, and that this will ripen in the natural course, even though not capped; but somehow it seems to lack a little in attaining to that perfect flavor to

be found in honey entirely finished and sealed by the bees.

Also quoting from the paper by Dr. E. F. Phillips, on "The Care of Extracted Honey," read at the Harrisburg convention, "It is the policy of most beekeepers to allow this ripening to take place in the hive by waiting until the honey is almost all or entirely capped, and this is *undoubtedly the preferable method*. It is a matter of common observation that honey which remains in the hive for a long time has a *better "body,"* and has *more of the characteristic honey aroma*. By ripening *in the hive*, honey gets its *characteristic flavor to a greater extent than is possible in evaporation outside the hive*. The thorough ripening of honey can not be too strongly recommended. *Honey attracts moisture*, and there is always a tendency for a very thin layer to form on top of the honey in which the water content is very high. In such a film the amount of sugar is low; the acetic-acid-forming bacteria can grow rapidly, and the honey becomes *sour*. In thoroughly ripened honey it is very probable that a film of thinner honey is always present; but in such a case the sugar content is so high that the bacteria *can not grow*" (italics all mine).

Thus it is shown that, for very weighty reasons, many of the foremost beekeepers and distributors of honey in the United States and Canada are unalterably opposed to any method of ripening honey outside the hive; and that, when there was an opportunity to advocate or defend such method, as at the conventions before mentioned, Mr. Alexander was the only open advocate, and he received no support except the slightly favorable remarks by the president, Mr. Aspinwall.

Mr. Hopkins has shown, from the report of Dr. Phillips upon samples of his honey submitted, that it was of superior quality in reference to water content and inversion; but it is noticeable that the doctor is silent on the points of flavor and aroma, which are all-important in making up the value of honey. Take away the element of flavor from honey, and there would be no occupation of apiculture. And if honey ripened outside the hive is so skillfully treated as to make it come well within the legal chemical standard as to water content and inversion, and has a *good flavor*, be assured that, if the same honey had been ripened within the hive by the bees in the natural way, it would have had the *best flavor*.

With his process, requiring special attention to ventilation and the use of artificial heat, the use of the thermometer and

hydrometer, the repeated testings of honey at the top and bottom of the tank, and the mixing, Mr. Hopkins is undoubtedly able to get the best there is out of ripening honey outside the hive; but "how many Hopkins are there?"

The process of securing ripe honey in the natural way is extremely simple. Just leave it on the hive, with the bees, until after the close of the flow, or until perfectly capped; then remove, uncap, extract, strain into tank, allow time for foreign particles to collect on the surface of the honey, and then draw off the sparkling liquid into suitable containers.

If all honey were allowed to ripen in the hives by the bees, unripe and ruined honey on our markets would be a curiosity; but as long as man assumes this undertaking, wherein, for him, perfection is impossible, there will be many fold more failures than doubtful or partial successes, and the highest attainments in the science of apiculture will not be reached. The beekeeper is wise if he goes not out of his way in resorting to extra care and equipment, to secure honey that necessarily falls short of perfection, and more often proves to be a failure when the best is so easily obtained.

It is no reflection on man to say that the bee knows the most about making honey; for the Creator has endowed her with a superior and inimitable process of ripening it and preserving its flavor, and has withheld this art from man. But in his wisdom he has given us dominion over the bee, and thus it is ours to have perfectly ripened and flavored honey if we will.

Kenmore, N. Y., Jan. 6.

[Our correspondent has done well in gathering together the bibliography against ripening honey artificially. As a matter of fact, we could gather enough more statements, made at different times against the practice, that would fill up one or more journals. The trend of opinion on the part of experts, both producers and honey-buyers, is emphatically against it. In saying this we do not mean to imply that uncapped honey is necessarily unripe. The usual rule is to extract when two-thirds of the cells are capped over. The remaining third of the cells, uncapped, contain honey that is nearly if not quite ripe, and only awaiting the action of the bees to seal it up.

In this connection we may state further that Mr. E. W. Alexander was one of the most valued correspondents we ever had. Perhaps no one writer we ever had has been quoted more than he; and yet, after he had put out the doctrine of extracting before the combs were sealed and ripening in open

tanks, we are frank to say we were condemned by beekeepers and buyers everywhere for letting the doctrine appear in our columns *without a protest*; and Mr. Alexander himself once told us that because of this he had more mad bees (beekeepers) buzzing about his head than he had ever had before.

After saying all this, we believe it is, nevertheless, a fact that in most of the extracting of a whole yard, some combs will be only half sealed and some only a third, yet all are put through the extractor. A few combs out of the whole lot will do no particular harm, even if not ripe.

In favor of Mr. Hopkins, we may say he is one of the best beekeepers in the southern hemisphere. As a man and as a producer he stands high. But his own countrymen, judging from the letters we have received, are opposed to the doctrine of extracting before the combs are sealed, although they may admit that he is probably expert enough to do the work. But we are firm in the belief that any artificially ripened honey, while it may be thoroughly inverted from the standpoint of the chemist, will lack some of the beautiful richness and flavor that is so much prized in honey that has been allowed to ripen on the hives.—Ed.]

QUEENLESS COLONIES GATHER POLLEN BEFORE BECOMING QUEENLESS

BY R. O. MARTIN

On page 797, Dec. 15, Mr. Holtermann says, "The evidence of a queenless-colony condition last fall will be pollen-clogged combs, indicating that the bees gathered pollen, and did not have larvæ to feed the pollen to, and it had, therefore, accumulated in the combs. I find no exception to this. Does this, then, not prove conclusively that queenless colonies do gather pollen?"

The evidence of no larvæ to feed is good; but I do not take much stock in this as an argument to prove that queenless colonies gather pollen. My queenless colonies have not only the pollen, but plenty of honey too, for that matter. Does that prove that queenless bees gather honey and pollen? Certainly not, because *the bees had gathered all or nearly all of this pollen and honey before they lost their queen.*

Did you ever examine a colony that had just lost a queen, and did you not find the combs full of honey and pollen? I am speaking of a colony that has lost a virgin queen on her mating-trip, when nearly every cell of brood had hatched. If the young

queen had made her flight safely, wouldn't the bees have hustled to get that honey and pollen out of her way?

Did you ever see a queen come out of the hive to mate, and watch for her return, she being lost? Have you, then, noted the colony's actions as the bees run out and in, up and down, and almost all over the hive? Have you watched them the next day, and the next, etc.? They are always looking for their queen. They come out on the alighting-board, hesitate a while, fly away in a half-hearted way, and this at a time of the year when the bees are not robbing. Occasionally you will see one with a small amount of pollen; but look at the hive that has a young queen just beginning to lay. See how they run out on the board, and away they go. Do you see any difference in the two colonies? It is easy to distinguish between them, for the bees of one are all hustle and the others seem very lazy. The bees with the queen bring great loads of pollen; but the queenless bees scarcely ever have a load—not enough to clog the combs in a year at that rate.

When the robbers are active it is harder to tell the queenless colony. There is a difference even then, however, for the robbers will hang around the queenless colony more than they will around a colony with a queen. That is the way bees act in this locality.

Naylor, Mo., Jan. 5.

Making Increase Before or After the Main Honey-Flow

Being a subscriber to GLEANINGS I come to you for advice. I had considerable experience with bees in Illinois some 25 years ago; but all conditions here are so entirely different I feel like a beginner. Spring will begin here about Feb. 1; and by the last, bees will be actively at work much of the time. From the middle of March to late in April we get most of our natural swarms with a few any time till late fall—usually a short honey-flow in April from fruit, mostly peaches; then they just about get their living till July 5, when there will be a fair harvest with a steady yield for three months or more. Now, under these conditions please tell me what is the best method to manage so as to secure all the increase possible, and still have all, both old and new, in first-class order for fall harvest.

Winton, Cal., Jan. 23.

L. T. AYRES.

[The conditions here described are ideal for making increase and securing a honey crop, and we believe you can make such increase before the main crop comes on.

As to the method of increase, the one we would recommend to you is given in the A B C and X Y Z of Bee Culture, under the head of "Increase," or what is known as the Alexander plan. We have had very many favorable reports regarding this, and we believe that you will secure better results with less loss of brood than with any other one that you can adopt. For further information you are referred to the subject of "Nuclei," found in its alphabetical order in the same work.—Ed.]

NATURAL SHELTER VS. ARTIFICIAL WIND-BREAKS

BY J. L. BYER

On page 775, Dec. 1, 1912, Mr. Holtermann has an article entitled "Fences for Winter Protection;" and as this is a subject on which I disagree with my friend, naturally the said article was read with more than usual interest. Right here let me say that, while we generally agree on all matters apicultural, yet when such a condition is not possible we can always "agree to disagree" with one another, and that is all there is to it. On this subject of winter protection my experience has been so very much in favor of natural windbreaks, such as hedges, trees, etc., as compared with a bare board fence, that I actually wonder at the claims made for the latter. While the fence may more effectually stop the wind, yet with me the best results have always been obtained from a shelter that breaks the force of the wind and yet allows it to pass gently through the yard. Having just purchased a camera, and being eager for a little practice, I have taken pictures of four of my yards wintering outdoors, and I will briefly explain how the shelter in each yard seems to have worked out in actual practice over a term of seven or eight years.

Fig. 1 shows part of the Markham apiary, which is sheltered on the north, west, and east by apple trees, small fruit, shrubs, etc., with buildings on the north. The house is about 80 feet north of the yard. Here we have always had first-class wintering with the exception of one season when a lot of honey-dew was in the hives. In addition to wintering

well, the bees in this yard always "spring" well too; and the colonies are always boiling over with bees early in fruit bloom.

Fig. 2 shows a small corner of the Cashel apiary. This yard is sheltered on the north by a lot of high evergreens; on the east and west sides by an apple orchard, while the south is protected by buildings. Like the yard already described, the bees here invariably winter in perfect condition, and, with the exception of the year when honey-dew was so plentiful, a colony is rarely missing in the spring. This apiary has 105 colonies, and has had 80 or over for the past six years, with always the same kind of wintering.

Fig. 3 shows a corner of the home yard where, as will be noted, is the board-fence protection advocated by friend Holtermann. Colonies in this yard never winter as well



Mammy and the bees.—Photograph from M. C. Long, Kansas City, Mo.



FIG. 2.—Corner of J. L. Byer's "Cashel" apiary.

as in the two just described. The early spring is the time when the fence works havoc, as often on sunny days with a cold wind the bees will fly north and drop by the thousand on the ground (there is often snow there when it is all gone in the yard); and as the sun does not reach them there, they perish in great numbers. This yard is about the only one that I have any spring dwindling in; and the peculiar location is, in my mind, partly responsible for this condition. I have thought of removing the fence altogether; but as I use quilts, a wind-break is a great convenience, as all will testify who have tried to work with the bees in the open, when quilts were over the hives, and a high wind blowing.

Fig. 4 shows the Lovering apiary, 100 miles north of my home; but as this yard was established last summer I can not say how the location will prove in the matter of protection. However, in my opinion the protection afforded is just about perfect. All summer, although the covers were loose on top of the hives, not a single one blew

off. North of the yard the rocks gradually rise to quite an elevation, while on all other sides the forest protects the yard. The yard is right out in the forest—in fact, in a nice bit of clearing, making an ideal location, while the trees are not near enough to give too much shade at any time of the year. The only fault we found last summer was that the place was inclined to be too warm, as the hives are on rock, and so much shelter keeps out the breeze too much. In the winter time in this location the thermome-

ter sometimes plays around 40 below zero, so this same shelter is an advantage.

Last fall a venturesome deer strayed among the bees; and, although he came there before the hunting season, from all accounts, I understand he was carried out a corpse, and he wasn't stung to death by bees either. With good boating and fishing near the place, every thing considered, this place is ideal for a summer outing, even if black flies and mosquitoes are quite plentiful in the early part of the season.

I might add that two other yards here in York Co., that are wintering outside, have not been visited since I got the picture-machine; but as the protection is similar to that of the other apiaries, no good would be accomplished by showing them, any way. The 250 colonies wintering in the caves out east, 200 miles from home, are safe from the "camera fiend" for a few months yet; but it is likely they will receive a visit from him some time next May.

Mount Joy, Ontario, Canada.

MAKING INCREASE DURING THE WINTER

Feeding Syrup and Artificial Pollen to Bees that Have a Flying Cage in a Warm Room

BY GEORGE T. WHITTEN



FIG. 1.—Part of J. L. Byer's "Markham" apiary.

For the past four winters I have been experimenting with bees in a warm room for winter increase, and I find I can easily make two swarms from one colony, making three in the spring. This seems to be the limit, as I have only two windows available for the purpose; but I am perfectly satis-



FIG. 3.—Corner of J. L. Byer's home apiary.

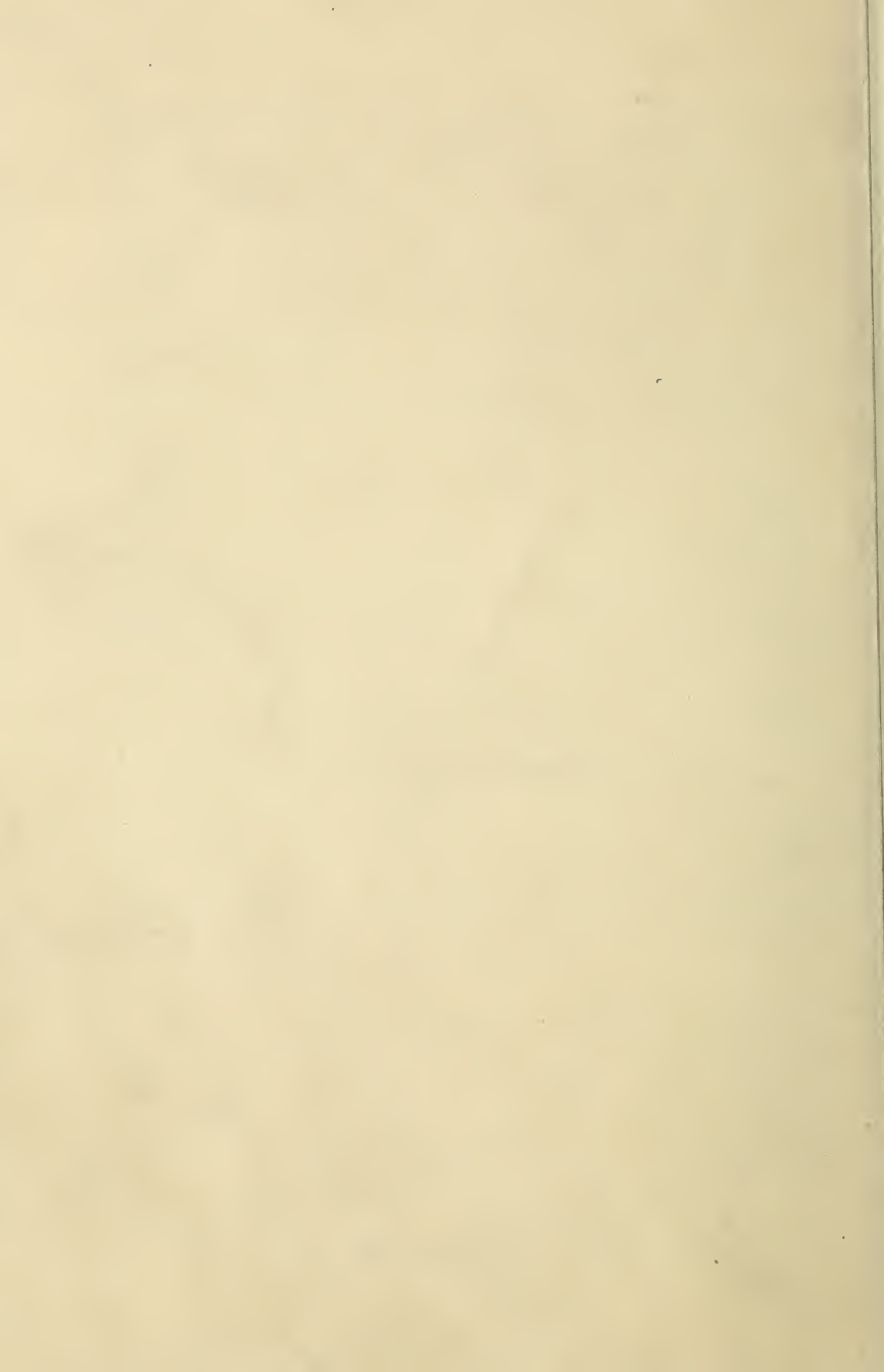
fied that it can be done, to the limit of the number of frames of bees on hand Sept. 1, and of windows available, if there is a room where the heat can be controlled as desired.

This work can be begun at any time during the winter by moving a colony inside and furnishing the necessary temperature of about 70 degrees per flying cage. The bees must be fed sugar syrup, rye flour, and water every day. Thus treated the queen

will begin laying in about three weeks, and keep it up as long as fed. Pollen, or a substitute, such as rye flour, is as necessary to keep the queen laying as syrup and water. Feed should be given every day, and two or three times a day is better. If the feeding is stopped for a few days the queen will stop laying, and it takes four to six days to get her started again. My experience has been that a queen will do just as



FIG. 4.—J. L. Byer's "Lovering" apiary in winter quarters.





Delegates in Attendance at the National Beekeepers' Con., Cincinnati, Feb. 12, 13.—See report on page 190.

good work the following summer after being worked in winter in this way as though she had been wintered in the ordinary way. I can see no difference.

I feed sugar syrup wholly in winter—no honey—two parts sugar to one of water. I put the sugar in a jar and put the water in warm, not hot, and stir a little, then let it stand for a while to dissolve. By stirring it two or three times there is but little that settles in the bottom hard; then by running it through a cheese-cloth strainer this is taken out, leaving the syrup clear to feed. I have never had any of this crystallize in the hive.

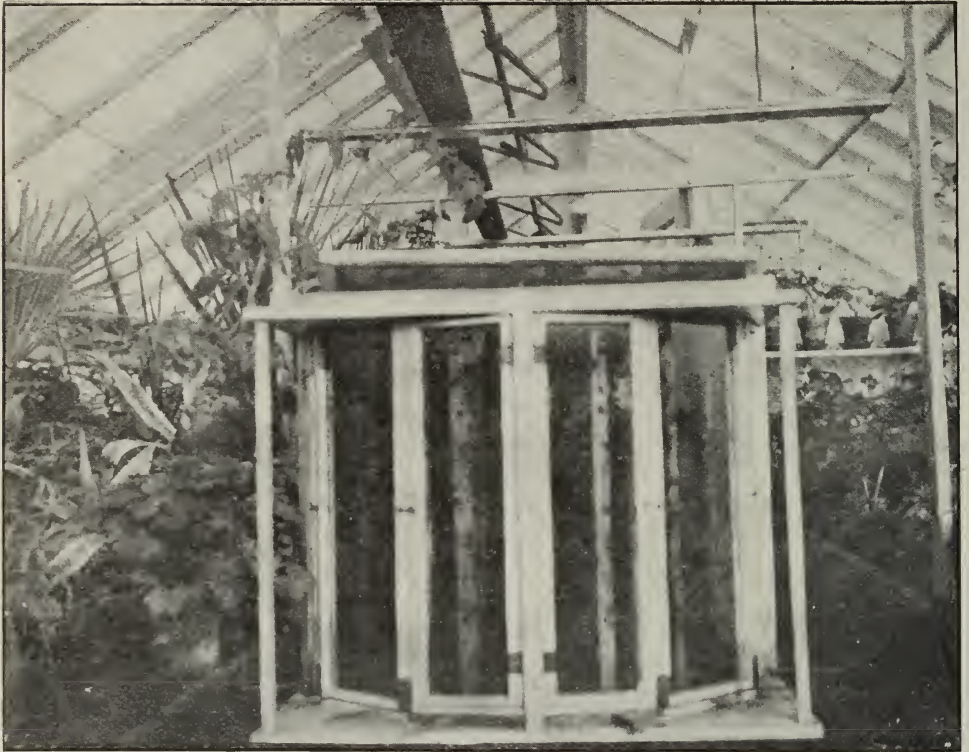
The most satisfactory place for feeding syrup that I have tried is over the cluster. On all hives I have a frame made of pine, $\frac{1}{2}$ by $\frac{3}{4}$ inch, just large enough to cover the hive top, and with wire netting on one side. These are on the hives all the year. In winter they are over the top of the hive, under the super to hold the packing. This gives the bees a space over the frames close up under the packing. In summer they are on top of the super or supers. The cover of the hive may be removed at any time to look into the super without disturbing the bees. They do not come up and bother. I place two or three thicknesses of cheese-

cloth over the frame, and spread the syrup evenly over this. The bees can come up under the wire and get the food without leaving the cluster very much. With the super on top they can be fed at any time by removing the cover. There is no danger of robbing when fed in this way, and the heat of the hive keeps the food warm.

The best way to feed rye flour is to sprinkle it on plants, or spread it on something that the bees can hang on while they load up. They do not take it readily from a dish placed on the floor, but will, when they can, hang on to the edge of the feeder, or the under side. I lay a cheese-cloth on

top of the cage, or hang it over the slanting end next to the window. They come up and hang on the under side with one foot, and load on all they can. The food should be placed where the light is strongest, for that is where they gather thickest.

I built a hive specially for observation work, that has been in use for three years. This gives perfect satisfaction. It is built on the half-circle plan, with glass on all sides. The frames are so arranged that they can be turned so that both sides of each frame may be examined at any time. Four turn to the left and four to the right. A rim is provided at the bottom, and handles



Geo. T. Whitten's observation hive in a greenhouse. The combs swing from side to side, so that all their surfaces may be inspected.

project out through, by which the frames are turned as desired.

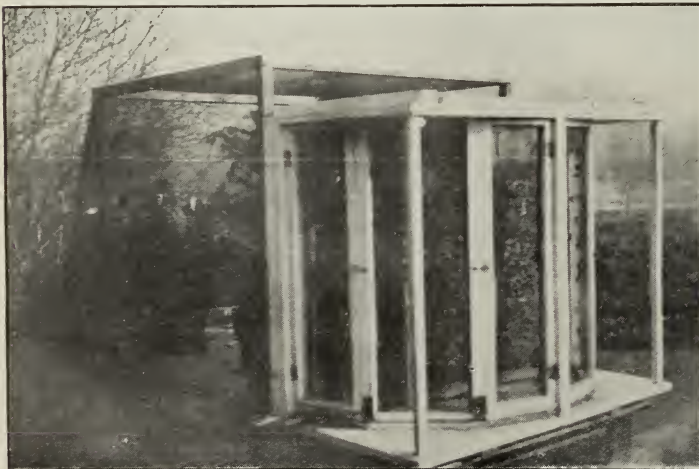
The flying cage used is two feet square, covered with wire, with an entrance in the back for the hive, and one at the front to allow the bees to go outside in warm weather.

The great advantage of a warm room,

and the principal one, is in keeping an even temperature, or nearly, so they can extend the brood-nest to any size without danger of the brood and eggs being chilled, which is the principal cause of spring dwindling. There are many eggs laid that do not hatch, for the reason that there are not enough bees to cover them when the temperature

drops after a warm spell. I have had this occur in the house when, for any reason, the temperature dropped too low, as by opening the window to cool the room, to drive the bees into the hive from the cage; or when I wish to change the plants or clean it out. That day, Dec. 21, I found young half-grown bees out in the cage.

This cage is close to a radiator, so there are bees flying at all times during the day and in the evening



Another hive, located out of doors, with the cage attached.



Bankston's nursery cage. Each compartment has room for a small piece of comb filled with honey.

as long as there is a light in the same room. To-day, Dec. 24, while the snow is falling fast outside, the bees are flying and humming in their cage as though it were June instead of Christmas.

Hartford, Ct.

A NEW NURSERY CAGE

BY C. B. BANKSTON

About 22 years ago there came into use what was known as the Alley nursery cage. This cage was simply a little square block of wood with one large hole in the middle, and two half-inch holes in one end. One of the small holes was for a sponge to contain honey for the young or old queen to eat. The other was for the insertion of the queen-cell. Twenty of the cages just fit inside of a Langstroth brood-frame.

We used this cage for many years. It beat the old lamp nursery, but it had many faults. The sponge would get dry, so that the queens would starve. A great many would hatch with crippled wings or were otherwise deformed.

I tried different makes of cages, and finally set to work and invented one myself.

I have used it nearly ten years, and have no idea of replacing it with any thing I have ever seen along this line.

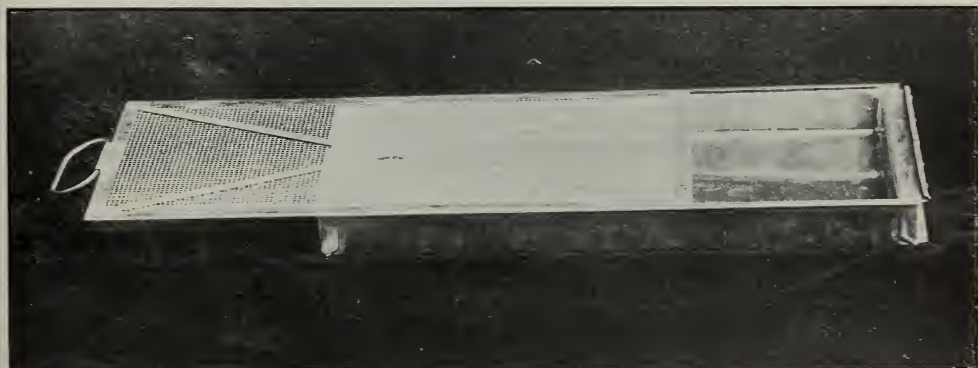
In the Oct. 15th issue, page 663, is an illustration of a nursery which, apparently, is the old Alley cage re-invented. The accompanying engraving shows my new cage, which I call the "New Century" because I think it is new. The queens emerge in it perfectly, and they live and develop in it as well as they will among the bees, because they have access to honey, warmth, and all the conditions necessary for their well being. I fill the little combs full of honey, trim the queen-cells, touch the wax plug to the hot smoker, and stick the cell to the plug. I can have 60 queens hatch in one brood-frame.

Buffalo, Texas.

SEPARATING HONEY FROM CAPPINGS BY CENTRIFUGAL FORCE

BY R. F. HOLTERMANN

The discussions which take place at conventions are by no means the only source of information for the beekeepers who attend them. Conversations, sometimes in part in



Capping-basket to fit the comb-pocket in an extractor for use in separating the honey from cappings by centrifugal force.



Colonies in tenement hives.

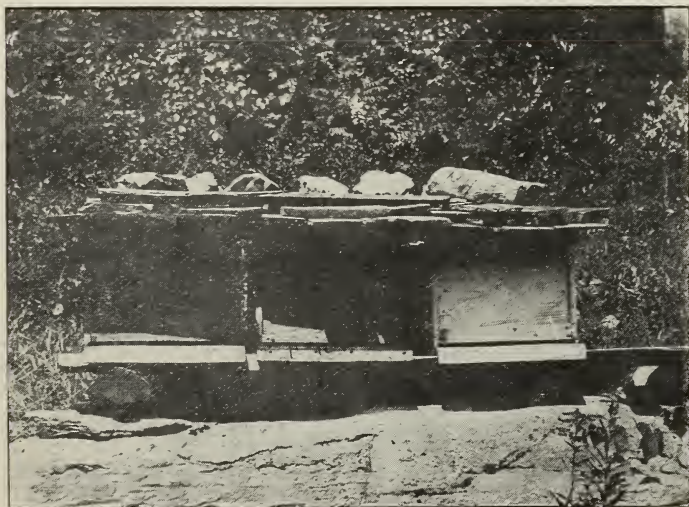
confidence, have for me been a fruitful source of instruction. There is, however, yet another source of information, and that is to visit some of the beekeepers in their homes after the convention is over. Such kindnesses to me have been frequent, and in no small degree have they been extended to me in New York State.

In December last I went to New York under the New York State Board of Agriculture, and upon completing my engagement I accepted several invitations from beekeepers to visit them at their homes and

apiaries. My first visit was with D. R. Hardy, Burr's Mills, N. Y. It was a stormy night when Geo. B. Howe, president of the New York State Association, and I landed at Watertown; but we were met by Mr. Hardy and taken to his home in the country, and made welcome. After supper a brief visit was paid to the bee-cellar and honey-house. Mr. Hardy is an unusually painstaking beekeeper. He is not afraid to follow original ideas, and he has evidently met with a more than average amount of success. He has been developing a strain

of bees about one quarter Carniolan and three quarters Italian. Turning to me, he said, "I can remember your suggestion years ago at a State convention, that such a bee was, in your estimation, a superior one." Mr. Hardy has been acting upon the correctness of this idea, and he appears to be well satisfied with the result.

For extracting, Mr. Hardy uses a power extractor and a three-horse-power gasoline-engine. Turning to the capping-can he said, "I want to show you



Hives set too close together for easy inspection.

my method of taking the honey from the cappings." A large wooden paddle was shown as the instrument by means of which he broke up the sheets of cappings. When these had been broken into small particles by stirring, he next put them into a pocket consisting of a box the size of a Langstroth frame. The top, bottom, and sides were formed by a wooden wide frame, and fine tinned wire cloth was nailed to each side. In the top piece (as it stands in the extractor) an opening was cut in the wood, through which, by means of a specially made funnel, the broken-up cappings were crowded, after which the device was placed in the extractor, just as a Langstroth frame would be inserted, and the honey was extracted just as honey is extracted from the comb. I saw the wax after the extracting, and found it very free from honey, and I felt that this plan filled a "long-felt want" in my extracting equipment. I told Mr. Hardy that I would make this outfit in the way of a basket with one entire side made to slide on and off. To this Mr. Hardy acquiesced, remarking that the box into which the cappings were placed could be made of heavy tin. I have six such baskets now ready for use. We shall have to call this apiarian implement the Hardy capping-extractor.

Brantford, Canada.

[This new method of draining cappings by centrifugal force is one that gives promise of much merit. We shall try it ourselves the coming season. Mr. Hardy's apiary is shown in the cover engraving for this issue.—Ed.]

EXPERIENCES OF A FOUL-BROOD INSPECTOR

The Greatest Trouble that of Opening Hives

BY J. E. CRANE

I fancy that a good set of burglar's tools would be a very good outfit for an inspector in opening even movable-comb hives; for in nothing have I been more disappointed than in opening such hives. I believe that, as yards run, it is as easy to get into box hives as into those containing combs that are supposed to be movable. I thought at first it was because I found so many with Hoffman frames, and I still think the Langstroth more readily movable, when properly constructed; but the greatest difficulty has been because of crooked combs. Many beekeepers appear to be afraid of their bees, then hive them and run. At night they set the new swarm in its place as quickly as possible, and get away without stopping to

see whether every thing is all right. So I find hives with Langstroth frames properly spaced at one end, while at the other they have all slid together with no uncertain result.

HIVES STAND TOO CLOSE TOGETHER.

Some of my vexations have been caused by the position of hives which were set in long rows, perhaps not more than four inches apart, and which it was necessary to lift from their stands before I could open them. The three in the illustration will show what I mean; but three are easy compared to twenty. Often it is easier to open hives and to examine them than to lift off the stone, boards, and slate with which they are covered. I often think, as I make my rounds, how much the majority of beekeepers are losing by not knowing better how to keep bees.

NOT NECESSARY TO DISINFECT HIVE-BODIES.

When I began work, and found foul brood in almost every yard, it seemed like trying to fight an enemy that used noiseless guns and smokeless powder; but after more experience it seems to be controlled by well-defined laws; and those who are willing to follow a few easily learned rules can rid their yards of it. I am watching with a good deal of interest in order to determine whether it is necessary to burn out brood-chambers or to disinfect them otherwise. I have suggested to some experienced beekeepers to try it, without burning or disinfecting, and so far it has seemed to work well. The fact that many beekeepers have overcome the disease by leaving colonies queenless for a time would seem to indicate that it is not always necessary to burn out hives for the purpose of destroying all germs of disease.

If it proves successful it will greatly lessen the work of changing combs, especially where large chaff hives are used.

CLEANING THE TOOLS.

How shall we disinfect the tools we work with? Some inspectors advise boiling in hot water for half an hour—a safe provision against carrying infection to the next yard, no doubt, but far from practical, both because of the difficulty in getting hot water and the loss of time. Then an inspector's fingers often become soiled with foul-broody honey. Must they be cooked with the hive-tools for half an hour? I have compromised; and instead of boiling with water I thrust my hive-tool, when through with one yard, or before commencing on another, into the ground, in and out, until it is bright and clean, and I have no fear of its carrying disease. I also wash my hands in water if I can get it.

DEAD LARVAE ON THE GROUND SPREAD THE DISEASE.

There is one way by which I think it is possible that disease may be spread of which I have not spoken. Where many hives are diseased, thousands of the dead larvæ are hauled out of the entrances and left near by on the ground. These, decaying, may (after a little) become dust to be blown on or into flowers, into the entrances of hives, or carried by the bees where they will get into the food of young larvæ. I have in some instances advised a change of location with entirely satisfactory results. I have found two or three beekeepers who feed their bees a weak brine, thinking it very beneficial.

CEMENT HIVE.

One man I met had constructed a hive of cement. Unfortunately he had made a slight mistake in the size, so he could not use his frames in it, and so had never tried it. It looked substantial, and might prove a success in some parts of the country.

HONEY FROM CORN.

Another beekeeper told me how his bees gathered considerable honey from corn, and, later in the season, wrote me that again they had stored some ten or twelve pounds to the hive, thus helping him to solve his winter problem, for his bees, like most bees in our State, had not stored enough to winter on.

THE PLEASANT PART OF THE WORK.

While there are many unpleasant features in connection with inspection work, there are many pleasant experiences to be thankful for. It is pleasant to study the honey resources of one's State, and to see the advantages and disadvantages of different sections. One has also an opportunity to make some choice acquaintances, and to visit old friends without much loss of time or expense. One such I must mention.

Forty-three years ago I learned of a man about seventy miles away who wanted to sell out his entire stock of bees, as he had met with some loss and was quite disgusted. After some correspondence I went to his place and bought most of his stock. He was a very intelligent beekeeper for those times, and I much enjoyed the time I was with him, as he told me so much that was then new. Afterward we corresponded for a time, and I lost track of him, and I thought he had of me. While looking up foul brood in his neighborhood I thought I would go over to see him and inspect his bees, for I knew he would have some, for who ever, after once falling in love with bees, would go without them? I found him and his good wife more than pleased to see

me, and he could not do enough for me. I found that he had a good stock of Italian bees; and if they defend their homes against foul brood as vigorously as they did against the interference of the inspector it will be a long time before disease will do them any harm. After a most delightful visit he took me in his carriage over to see a neighboring beekeeper, and then to the trolley line.

Middlebury, Vt.—*The Ensl.*

BRIEF REPORT OF THE NATIONAL CONVENTION AT CINCINNATI

BY E. R. ROOT

The attendance at this meeting was not large—indeed it was, perhaps, the smallest of any of its kind that we have ever attended. At no time were there over fifty present. In another way it was a large convention, because it was a representative meeting. There were delegates, each representing an affiliated society, from Vermont, Massachusetts, New Jersey, Pennsylvania, New York, Ohio, Kentucky, Michigan, Indiana, Virginia, Tennessee, Iowa, Oregon, Colorado, Idaho, and Texas; or, all together, a membership of several hundred. Some of the associations sent more than one delegate. In this connection it should be explained that this convention differed from all others in that it was a *delegate* meeting. Besides delegates, there were members of the Association who, while they had the privilege of the floor, had no vote in business matters. Then, as is usually the case, there was some local attendance, but not nearly as much as we ordinarily see at conventions located at Cincinnati. For that matter, there would have been a much larger local attendance, we understand, if the meeting had been held earlier, say along in September or October.

The Bureau of Entomology, Washington, D. C., was represented by Dr. E. F. Phillips, in Charge of Apiculture, and by Geo. F. Demuth. Dr. Burton N. Gates, Dean of the Apicultural School at Amherst, Mass., was also present. Indeed, he was elected presiding officer in the absence of Mr. Geo. W. York, the regular President. Mr. R. F. Holtermann and Mr. Foster, of Canada, represented Canada, but not as delegates.

This convention was unlike any of its predecessors in that its primary object was the transaction of business, and a lot of it was done. The principal subject of discussion at the first session was whether the National Association should have an official organ. Something over a year ago the Board of Directors voted to buy the *Beekeepers' Review* of Secretary Tyrrell. The

question arose whether the Directors had the authority to adopt and publish an organ, and expend a thousand dollars for the good will of a paper. Some took the ground that the Directors had exceeded their authority. Others held that the National organization could not afford at this time to pay out a thousand dollars. These matters were thrashed over in convention, and at one time the discussion became somewhat warm. The matter was finally referred to a committee, with instructions to report at a later session. The committee were out for a considerable length of time, but finally turned in their report, questioning the policy of the Directors, but finding that the latter had not exceeded their authority. At the same time, they made certain recommendations, some of which related to the editorial policies of the *Review*, while others had to do with the question of the purchase of bee supplies for the members of the Association, as well as to the selling of their product—in short, carrying out the general principle of co-operation.

There was considerable discussion as to the price that should be charged for membership. It finally ended with the recommendation, which was adopted, that the fee of \$1.50 should be retained as before. Fifty cents is to be used for branch or affiliated societies, and \$1.00 for *The Beekeepers' Review*. Sec. Tyrrell explained that this money could not be used to cover both the *Review* and membership dues, as that would be contrary to the postal regulations. This leaves, as we understand it, no funds for the National Association except the profits that may accrue from the publication of the official organ. A member may elect not to take the *Review*, and apply his dollar to the National.

There was considerable discussion as to whether the whole membership fee should not have been increased so that a part could be devoted to the branch, a part to the *Review*, and a part to the National itself, apart from the *Review*; but Sec. Tyrrell did not believe it was wise at this time to charge the extra price. The committee, therefore, made its report accordingly.

Other routine matters of business were transacted, such as revising the constitution, passing resolutions of thanks for courtesies extended, etc. While the committee were out preparing their reports, there was a general discussion of several subjects. One of these topics was

THE DECLINE IN THE PRODUCTION OF COMB HONEY AND THE INCREASE IN THAT OF EXTRACTED.

While poor grading and poor packing

were given as a cause for a part of this, several contended that the present market prices were more favorable to extracted. Two or three claimed that there was actually more money in the production of extracted at eight cents than comb honey at sixteen. The discussion finally centered on the subject of the granulation of Western comb honey; for it was contended that this granulation evil was disgusting the dealer so that he was refusing to buy. Mr. Muth, one of the largest honey-buyers, in a half-facetious and half-serious way, said he felt as though he were being swindled when he bought Western comb honey. He complained that he had a large quantity on hand that has granulated, and that was fit to sell only to Dagoes, and he thought it was time that some of these Western producers should produce extracted rather than comb honey. Mr. Weber, another dealer, said he had had a similar experience. Dr. E. F. Phillips, of the Bureau of Entomology, was glad that this matter had come up, for now the Western men present would have a chance to know that there was a general complaint about Western alfalfa honey granulating while in the hands of Eastern dealers. Like Mr. Muth, he believed that some of them, at least, ought to produce extracted rather than comb honey.

Mr. Wesley Foster, of the Colorado Honey-producers' Association, contended that not *all* Western alfalfa honey would granulate. There are certain districts in Colorado where a mixture of alfalfa and other sources would granulate much more readily than the pure alfalfa. He said he hoped the Eastern buyers would understand there is a large amount of Colorado alfalfa honey, and a good deal of it, too, that does not granulate.

Mr. Anderson, of the Idaho Beekeepers' Association, indignantly denied that Idaho honey granulates. *Their* honey, he said, was made up largely of sweet clover and alfalfa; that the combination would remain liquid as long as any comb honey in the world if properly taken care of. With all deference to Mr. Muth their honey was "fit for the gods" and not for the Dagoes only. In support of Mr. Anderson's claim, we may say in this connection that the comb honey of Idaho, so far as our experience goes, does not granulate readily.

GRADING COMB HONEY.

The question of grading-rules was given considerable attention. Mr. Muth, of Cincinnati, offered a set of rules which provide practically for only a fancy and a No. 1. No other honey, he said, ought to be shipped to market. Attention was called to the

fact that these rules, if adopted, would bar out a large proportion of all the comb honey produced; that there ought to be some means by which these lower grades could be described and sold.

Mr. G. F. Demuth, of the Bureau of Entomology, Washington, D. C., offered another set of grading-rules that differed radically from those presented by Mr. Muth. They were based on three definite points—namely, weight, finish, and color. The old Colorado grading-rules were based on a minimum weight of the case itself. The new Colorado rules, on the other hand, are based on a maximum and minimum weight of the section. He believed that this latter was the correct principle. His rules provided for three different weights, several grades of finish, including a fancy, a No. 1, a No. 2, and several shades of color. He recommended a scheme of colored cards that would enable the purchaser and producer to describe accurately the shade by a certain designation of color. The objection to the new Colorado grading-rules, said Mr. Demuth, is that they are not adapted to our Eastern honey. He would have the rules flexible enough so that they would take in Eastern as well as Western honey. He explained the system something as follows: In the matter of finish he would have extra fancy, fancy, No. 1, and No. 2. In the matter of weight he would have heavy, medium, and light. The finish would be designated by extra fancy, fancy, and No. 1 and No. 2. As for color, he would go by the color-card system. The three grades of weight, the four grades of finish, and the several grades of color, would make a variety of gradings. Here, for example, would be a section that he would grade as fancy, medium, white; or, for short, he would make it F. M. W., which would be marked in plain letters on one end of the case. Another case, for instance, would be marked No. 1 light amber, or be designated No. 1 L. A. Another case might be designated as No. 2, dark, heavy, or No. 2, D. H., and so on.

At the close of his general explanation Mr. Muth wanted to know if Mr. Demuth would hire a Philadelphia lawyer to make these discriminations. Both he and Mr. Weber expressed themselves decidedly as believing that such a system would be too complicated to be practicable—that with even the simple grades that have been in use, the average producer did not begin to grade in accordance with those simple rules. He hoped the complicated system advocated by Mr. Demuth would not be adopted. The latter explained that, although he was from

Philadelphia, his system was not as complicated as might appear at first sight. He wished to make it plain that the grading he proposed would take in any kind of comb honey—good, bad, or indifferent; that it would enable the producer to describe accurately what he had to sell, even though it were an off grade, and the buyer, on the other hand, to know just what he buys. He argued that one of the difficulties that arise between the producer and the buyer is the lack of some scheme to describe accurately the product under consideration. Both Mr. Weber and Mr. Muth expressed themselves as believing that such a scheme would be too awfully complicated to be of any use whatever. The rules were, however, adopted by the Association substantially as they were presented, except that the term "Standard" or "Choice" was substituted for the term "No. 2."

At the last session, after all the business had been transacted, and while the committee were out preparing a report, there was quite an extended discussion, covering the general subject of foul brood, over which Dr. Phillips presided. There being several foul-brood inspectors present, a report was rendered by each. The first was by Mr. Wesley Foster, of Fort Collins, Col., followed by Dr. B. N. Gates, of Massachusetts; Mr. Erbaugh, of Indiana; Dr. Ward, of Tennessee; Mr. Demuth, of Washington, D. C., and Mr. Cavanagh, of Indiana. The latter, while he is not a foul-brood inspector, has had a wide experience with European foul brood.

The discussion on this disease was interesting and valuable, because it showed the great importance of having vigorous Italian stock. But it seemed to be difficult to effect a complete cure with the ordinary black bees, in the case of European foul brood. The reports of all the men indicated that they were getting foul brood well under control. Not the least important thing in this inspection work was the information that the inspectors are able to impart, not only to those who have foul brood, but to those who have not.

An election of officers for the ensuing year resulted as follows:

President, Dr. B. N. Gates, of Massachusetts; Vice-president, Prof. H. A. Surface, of Pennsylvania; Secretary, E. B. Tyrrell, of Michigan.

The following were elected as Board of Directors:

E. D. Townsend, of Michigan; Wilmon Newell, of Texas; Wesley Foster, of Colorado; F. B. Cavanagh, of Indiana; J. M. Buchanan, of Tennessee.

Heads of Grain from Different Fields

The Folly of Using Small Rusty Tin Packages for Extracted Honey for the Retail Trade

Some large honey-producers are beginning to put up extracted honey in small tin cans or pails, when extracting in the late summer and fall, for the retail or family trade during the winter. Of course, this procedure is a more convenient and less expensive method than to put the honey into five-gallon cans, when extracting, and then later on perhaps remelt it and put it into smaller cans and pails for the retail or family trade.

But I happen to know a man who purchased, from two different extensive honey-producers, some of those self-same cans and pails, several months after they were filled, and some of them were the worst and toughest-looking honey cans and pails I ever saw. All looked as if they had been used before for some purpose, either for canned tomatoes or corn! In one instance they were all labeled with the producer's honey-labels; but the cans had become so rusted that the labels were loosening. In the other lot, while the cans or pails had not been labeled, they were rusted in spots, and were a "bum-looking" lot.

Now, no retailer of honey, nor any one working up a family trade in honey, cares to deliver it in what looks like second-hand cans. It is enough to discourage sales, as no nice clean housekeeper would want to buy honey the second time (nor the first time, for that matter) if it is put up in rusty containers of any kind, even though the rust is only on the outside.

If honey-producers are going to make a practice of putting their extracted honey in small tin packages at the time of extracting, then they should use only new bright cans or pails, and, after filling, store them in a practically dust-proof and very dry place, so that they will be kept clean, and also not rust. This is a very important matter indeed; for, some of these days, the honey sold in such second-hand-looking cans and pails is going to be *refused*—shipped back to where it came from, or held subject to the order of the shipper. And that would be simply what the shipper who will send out honey in such cans or pails deserves. No person who is endeavoring to work up a family trade in honey wants to deliver it in any thing but bright new tins, if he uses tin packages at all.

I think this is a matter worthy the attention of every producer who practices putting up his honey in the tin retail packages at extracting time.

Sandpoint, Idaho.

GEORGE W. YORK.

[Some of our old readers will recognize the writer of the foregoing as the former editor and proprietor of the *American Bee Journal* for so many years. He also did a large business in retailing and wholesaling honey in Chicago. He therefore speaks with a knowledge born of *experience*. He is entirely right in what he says.—ED.]

European Foul Brood and the Importance of Keeping a Strain of Italians that are Largely Immune to the Disease

You are lucky to have kept bees so long without having European foul brood. My experience with the disease is like that of Morley Pettit. It spreads to every hive in the yard, and to every comb that contains brood. Not only a few cells are affected, but less than half the young bees in a comb ever get out of the cells alive.

Dr. Miller's bees must have had the disease in a mild form, and then he had a hard fight and a long one; and he will be fortunate if the disease does not break out again next summer.

What I am most interested in now is to find a way

to get rid of the disease. I understand that when we brush the bees off the combs and put them in a clean empty hive and give them a new start they will start off free from disease; but some way they don't stay free. I understand, too, that when I take the queen away and keep the colony queenless till the young bees are all out of the combs, and the cells cleaned and polished ready for the queen, then put the queen back or give them another queen, the combs will soon begin to fill up with nice pearly-white brood; and I am not sure that the dequeening method is not as good as putting the bees into an empty hive; but about the next time I open the hive the white brood has turned yellow, and the disease is there again.

We are told to treat the bees when there is a good honey-flow on. White clover was abundant last year, but the flow did not come, and I worked at a disadvantage.

Oakland, Ill.

WM. COX.

[In some ways European foul brood is easy to cure and in other ways it is not. It seems to spread much more rapidly than the American type of disease, and, what is somewhat discouraging, the ordinary shaking process does not always eliminate the trouble. We have had a very large number of reports of how, after one shaking, the disease had returned again. We are coming more and more to have faith in the Alexander treatment; and that is, removing the queen and keeping the colony queenless and putting in pure Italian blood. There are some strains of Italians that are probably more immune to the disease than others. Mr. S. D. House, of Camillus, N. Y., has repeatedly told us that he has no fears of European foul brood, because he used a strain of Italians that would keep the disease off, and he has European foul brood among the black bees all around him, and yet his apiaries of Italians seem to be immune to any trouble of that sort.]

You do not say any thing about using Italian stock. While it is proper enough to remove the queen we think it is better to go even further, and put in good vigorous Italian blood. If possible, get a strain that will resist European foul brood—a strain that has been tried out and found to be equal to the occasion. We try to keep a strain of Italians that are immune to European foul brood. In all of our years of experience we have never had a trace of the disease.—ED.]

Overcrowding Bee-Ranges, and is there a Remedy?

I wish to ask about the law in regard to other apiarists crowding in on to one's bee-range. My neighbors and I started in this locality three years ago with our little bunches of bees. I have 25 colonies; the other neighbors of mine would bring the number up to about 75 stands—all our range will accommodate. Well, a few days ago another apiarist brought in 50 colonies of bees, and located them about 800 yards from my apiary, and is to bring in about 200 more colonies (so I am informed). What can I and my neighbor do about it?

Phoenix, Ariz., Jan. 20.

L. M. BROWN.

[You bring up the question that has often been discussed through the columns of our various bee journals, namely, the one of overstocking. There seems to be almost no remedy but a sort of unwritten law that prevails in some localities, not to put more than a certain number of bees to the square mile. Where the different neighbors and different beekeepers can get together and agree, they will divide up the territory in such a way that it will not result in overstocking; but very often outsiders come in and squat an apiary or two so close to bees already in the locality that the annual yield per colony is cut in two. There is no law in any State, with which we

are familiar, that regulates the number of bees that may be kept within a certain territory, and it is doubtful if any law would be constitutional if it were passed. The only thing we can suggest for you to do would be for you and your neighbors to go and visit these parties and explain to them that the locality is already overstocked; show them that, when so many bees are put in a place like this, it usually cuts down the yield; that it would be unprofitable for them as well as for you. The cost of moving bees from one locality to another is so great that the average beekeeper, if he looks to his own interests, will find some place where it is not already overstocked. The same problem that confronts the beekeeper around Phoenix and Tempe, Arizona, confronts the beekeepers in various parts of the West where alfalfa is grown very largely. We know of many localities in the West that formerly yielded anywhere from 100 to 200 pounds per colony; and now those same localities will not furnish more than 25 to 50 pounds per colony, simply because so many beekeepers have located in the territory that the yield is cut down. This policy results in a freeze-out game. After a few years the less successful will go out of business, or, rather, they will quit keeping bees or sell to their neighbors who are more successful, with the result that, in time, there will not be many more bees than enough to take care of the territory properly. No, there is absolutely nothing you can do except to use diplomacy of the finest sort, and moral suasion.

There is one thing that you can do: If these people who come in to your locality are bringing in diseased bees, they can be stopped. Go to your foul-brood inspector and have the bees inspected. If they have disease they will have to be removed or treated immediately. Most States have a law now by which it is unlawful to ship diseased bees into the State. Where you can learn that such shipments are contemplated you can have the inspector on his watch and have the bees stopped and examined before they come inside. Come to think, however, Arizona has no foul-brood law, so that you really have no recourse of any sort except moral suasion.—Ed.]

Requeening to Prevent Swarming; Does a Capping-melter Make a Room too Warm to Extract in?

Can you advise me of any beekeepers who dequeen their colonies to control swarming? I have heard that some beekeepers remove all queens at the approach of the swarming season, holding them in a nucleus for a time, and returning them in about 10 days.

I have seen the description of the new capping-melter. Does it throw very much heat when in use? We have always been afraid that we couldn't stand the heat which would come from it. Could a gasoline stove with an elevated tank be used instead of the coal-oil stove? Please advise as to how much floor space the capping-melter occupies.

Wooler, Ont., Jan. 23. WARRINGTON SCOTT.

[The practice of dequeening a colony to prevent it swarming is not so common as it was a few years ago. It works in a few cases with ordinary Italians; but in a yard of Carniolans that we tried out last summer it absolutely failed to do the work. The Carniolans swarmed out with their virgins, and made us no end of trouble; and if they had no virgins they would unite with some swarm in the air. One objection to dequeening to prevent swarming is that it takes the life and energy out of a colony. One with a queen will be much more active than one without, as a rule. We do not know of any one now who is practicing that method of swarm prevention.

Regarding the capping-melter, the board in the table is 4 feet long, 2 feet wide, and stands 29 inches high; and the pan is 18 inches wide and 3 inches

longer than the table, so that it projects at one end to hold the knife, so that the uncapping-knife can be dipped in hot water.

You ask whether this machine with the stove will heat up the extracting-room. A good deal will depend upon the size of the room. If it is of sufficient size to work to advantage, and there is plenty of ventilation, you will not notice this extra heat; but if the room is small, and only a single-thickness wall, and exposed to the sun's direct rays, on a hot day you will find the capping-melter rather warm to work over. If you are in a position to get an electric fan it will cool the room and keep it very comfortable while you are working. If there is no electricity, it is very easy to rig up a little fan in connection with the extractor. A gasoline-stove with an elevated tank can be used, provided the pipe is extended a foot or so, horizontally, so as to be out of the way of the melter.—Ed.]

Good Bee Locations in Oklahoma and Kansas

If you were to choose a location where you could branch out in the bee business, and make the production of honey your only business, where would that location be?

G. M. WHITFORD.

Arlington, Neb., Jan. 20.

[The question propounded above is a rather hard one to answer. There are many very fine locations in the United States that are not already occupied; but there are many other good locations that are already overstocked with bees and beekeepers. Some splendid locations have been utterly ruined because with too many beekeepers in the locality it injures the business so that there is no profit in it. There are many good locations in semi-arid regions of Oklahoma, Kansas, and Nebraska. In these States it is advisable to locate in a valley along some stream, and we would not go into the bee business very heavily anywhere unless the alfalfa or some one of the clovers can be grown quite extensively in the locality. There are many places in Oklahoma and Kansas, for example, that have almost no bees, and yet where alfalfa is grown. In such locations there are some splendid opportunities for the keeping of bees. The business perhaps is more profitable in the irrigated regions where alfalfa is produced; but one difficulty in such locations is that the field in most cases is already overstocked with bees and beekeepers. We find, however, that there are many locations in semi-arid regions where there are practically no bees kept. While the alfalfa does not yield as well, perhaps, in what is called the dry-farming districts, yet it yields enough to make the business very profitable, providing enough colonies are kept. We do not care to indicate any particular locality, but would suggest that you make a tour through northern Texas, Oklahoma, and Kansas. There are many splendid locations in your own State; but be careful to find some place along the rivers and creeks, especially in the valleys. High land is not as good a place to grow alfalfa in a semi-arid State as in the valleys.—Ed.]

Little Mortality Around Cincinnati

Bees are wintering perfectly here on their summer stands—very light mortality; less than a handful to each hive. Bees had five flights during December, and nine so far in January, as follows: Jan. 1, 2, 6, 18, 19, 20, 23, 25, 26. Has any one ever seen similar conditions? Colonies will surely come through the winter exceptionally strong, and they were packed with stores late in the fall, so there is hardly any likelihood of starvation. White clover is very abundant; and unless all signs fail, we will have a fine honey year in 1913. In this locality, bees will start gathering pollen about March 1. I have 11 colonies in good condition in my back-yard suburban apiary.

Cincinnati, Jan. 27.

ALBIN PLATZ.

Our Homes

A. I. ROOT

For I the Lord thy God am a jealous God, visiting God.—MATT. 5:8.

God hath said, Ye shall not eat of it, neither shall ye *touch* it, lest ye die.—GEN. 3:3.

For the Lord thy God am a jealous God, visiting the iniquities of the fathers upon the children unto the third and fourth generations of them that hate me.—EX. 20:5.

I want to talk this morning particularly to the young men and young women who are in the habit of reading these Home talks. My talk will also be to the middle-aged; and, before I close, I shall have something to say to the elderly ones, the ones whose hairs are beginning to get gray. I suppose most boys and girls, especially as they reach maturity, begin to think of this matter of *getting married*. It is sometimes true that the girls especially talk so much about getting married that they don't have room or time for any thing else. This is not just the right and proper thing to do; but it is true that both boys and girls should consider that God gave each one of us a human life to live with the thought in view that we should be "fruitful, and multiply, and replenish the earth;" and, in fact, I have touched upon this matter several times in these Home papers, of the damage that can be done to humanity by the offspring that, in the course of years, come from a single pair of men and women who are viciously inclined. On the other hand, we have many instances of how the world has been greatly blessed by a long line of people who *feared God* and loved humanity, and who have handed down their lifework to children and grandchildren until the world will scarcely ever know how much benefit has been conferred on humanity by the fact that they not only lived a good life but reared up boys and girls to follow after them along in the same line. Now let us take it for granted that most boys and girls expect to get married some time; that they expect, God permitting, to have a family of children. Now, my young friends, what *sort* of children do you expect to rear up and bless (or curse) humanity? I need not tell you how much time is being devoted now, especially in our agricultural papers, to this matter of selecting and rearing improved stock and planting good seed, which is along in the same line. Take the poultry industry, for example. How much time and money are being expended in getting a good strain of fowls whose eggs can be sold for not only a dollar apiece, but *ten* dollars apiece, and sometimes even more than that? In order to get a good parentage to start, no stone is left

unturned. On page 605 of GLEANINGS for September 15 we had a vivid illustration of how much pains the government of the United States is taking to stamp out injurious insects and things of that sort; and our attention is now called to the fact of how little is being done to improve the race of boys and girls and men and women.

Sometimes in talking with hardened criminals in our jails I have asked the question, "Would you want to see a boy of yours doing exactly as you have done?" The answer invariably comes, "God forbid." Even a hardened criminal has some scruples about seeing a *child* of his follow in the footsteps of crime. Now, my young friend, let us get back once more and ask the question, "What kind of boys and girls do *you* propose to give the world?" The Bible says, and our agricultural and poultry papers say, that like produces like. If you give way to vicious and impure thoughts, your boys and girls will be likely to do the same. The Bible tells us that this work *must* go on until the third and fourth generation. By the way, I have at different times heard critics find fault most severely with this passage in the Bible. It is repeated *four times* in the Old Testament, if not more. They ask what justice there is in punishing innocent children for what the parents did before they were born? My good friends, let me call your attention to the fact that God does *not* do this punishing. The father and mother do it themselves, and with the plain statements of the Scriptures before them; they do it with their eyes open; they do it deliberately and willingly. I once knew of a man who was an illegitimate child and part negro. He inherited his father's intellectual abilities and became quite a scholar. When he was grown up he said something like this: "My father deliberately cursed every single day of my life by giving way to a low, beastly impulse and passion. He did that almost in a single *moment of time* that has blasted every hour and almost every minute of my whole life."

Listen to this: A good mother, a good and wise mother, whom I know full well, once went along with her boy while a party were visiting the county infirmary. After they got home this bright boy, who had already begun to inquire into "cause and effect," asked his mother the question how it came that there were such a *lot* of people who were imbeciles and idiots. How does it come about we have such fearful

exhibitions of wrecked humanity? and why are there so many of them in almost every county? This wise mother might have told him just what was one of the greatest agencies in bringing this about. But I do not know but she was wiser still when she pointed him to one of the texts that I have chosen at the head of this paper. Come to think of it, I do not know after all that she called his attention to the text. I do not know what words she used, but it was something to this effect, and the boy has never forgotten it, even though now he is a grown man. The mother told him at least a large part of the idiocy and imbecility came from breaking a holy command that God has not only written in his word, but has implanted in the heart of every child of humanity, more or less. Let me digress a little right here.

From the time we come into this world until we step out, dangers beset us on every side. The babe is only a few months old when it reaches out its hands to the hot stove or to the candle, and is told, "Burny! burn! Mustn't touch it," and so on through life it has to learn. Sometimes when it is all by itself it thinks it will try the experiment and *see* what the consequences will be, and, sure enough, the little tender finger is burned, and it gets a lesson in the way of punishment. Eve told the tempter that God said they should not only refrain from eating of the tree of knowledge, but that they should not even "*touch it*."

My dear friends, there are things in the make-up of all of us where danger lurks near, whenever we even so much as touch the forbidden thing. Not only has God's holy word forbidden our touching it, but our consciences that he has implanted within us to tell us when we are getting over on to the danger ground. None of us know exactly, but it has always seemed to me quite probable that God proposed, in his own time—that is, when Adam and Eve arrived at the proper stage of human life—to make known to them all about the fruit of that tree, the tree of the knowledge of good and evil; but, as I have said, we don't know exactly about this. We *do* know, however, that God has planned, when we are fully matured, to give us knowledge that would be hurtful and dangerous to childhood and early manhood and womanhood. If you want to live to a good old age, and if you want to enjoy to the fullest extent every year of your life, let me urge of you to cultivate not only pure actions and words but pure thoughts. "Blessed are the pure in heart, for they shall see God." This one beautiful text covers the whole of it; and

you *know* when you are pure in heart (when you permit other than pure thoughts to enter your mind) better than anybody can possibly tell you. Sometimes parents excuse their sons by saying the young man is sowing his wild oats, and that in due time he will get over it and come down steady and honest. Perhaps the word *honest* is not just the one I should use here; but I think, after all, I will let it remain. Suppose he does get his crop of wild oats sown, and settles down honest and steady, and marries a good girl. Do not those wild oats, sown long ago, bear any crop? My dear friend, the crop is the one I have mentioned in the infirmaries, poorhouses, and insane-asylums in this land. Do you want to contribute to such a crop? Whatsoever a man soweth, that shall he also reap.

God has wisely planned to arrange so that the best years of every man and woman shall be used for the production of offspring. If you want to make a good contribution to humanity, it is not wise or well to commence too early in life. Wait until you are *fully matured*. In the same way it is not wise nor good sense, in ever so many ways, to delay the matter too long; in fact, God has placed a limit to motherhood, and I have sometimes thought he ought also to have placed a limit on all. I *do* know that old men frequently, after having given up the cares of life, perhaps moved into town and settled down to take things easy, still allow thoughts to take place in their minds that should be put away and forgotten *for ever*. I have known friends of my acquaintance who have gone to the insane-asylum, I think just because they gave up work and persisted in indulging in things that ought to have been put away long ago. If you want to live to be a hundred years old, if you want to have the full use of the powers of both mind and body, do not, I beseech you, ruin yourself, both body and soul, by letting selfish and ignoble feelings have any place in your thoughts or actions or life. I feel quite confident that there are people whose eyes rest on these pages who have had glimpses of the insanity and imbecility that come right along the very line on which I am talking. Perhaps they heeded the warning that God sent, for I feel sure it *is* God himself who does send such warnings to turn us back into the straight and narrow path. The very first pages of the Bible tell us that man was created in God's own image, and we are told in the back part of that same holy book that we are designed to be temples of the Holy Ghost. How can the Holy Ghost have any place or any perma-

ment abode in a body that is filled with things that are abhorrent to every honest and enlightened conscience? I am afraid that many physicians, or at least a large part of them, are not plain-speaking and honest enough to tell people who come to them just *where* the trouble is. Sometimes I am sorry to say that these same physicians, especially if they are not *God-fearing* men, are making such a poor record *themselves* along the line that I have been speaking of that they have not honesty and consistency enough to tell the patient who comes to them where the real trouble lies. We are just now being informed through all classes of periodicals that the saloons of our land are the hotbeds of every sort of iniquity along in the line I have been discussing. Their business extends from the "white-slave traffic" to the work of spreading indecent pictures and literature in such a way that they may fall into the hands of our children.

In closing let me submit a letter from a good brother who has had much to do in inducing me to take up this line of talk at this present time.

Dear Brother Root:—In the first place I wish to give you (The A. I. Root Co.) a little bit of encouragement. I never knew any company engaged in a secular business that took as much stock in spiritual things as your company does. Sometimes I have wondered if the different members of the company were a unit in the good work. Again, I have caught myself asking the question, "How long will they keep it up?" But be that as it may, I hope that in this thing you may "abound more and more," for indeed it is a praiseworthy thing. I simply can not find words to express my appreciation of the spiritual part of your journal, and Our Homes beats any thing I ever saw outside of a religious paper, and if any one were not in sympathy with the religious part of your work the other is so good that he will take your publication any way—or at least it seems to me it would be that way in many cases. I think from one end to the other GLEANINGS has the cleanest set of writers I ever read. I am not saying this to puff you up, for indeed once in a while I see expressions that I think should not be there.

There is one thing, however, where you have not sounded the warning as much as its importance demands. When I think of my boyhood days and remember how many of my playmates and others that I knew are in their graves, and still others who have been in the insane-hospital, and that there are but few strong ones among all the living, and remember, also, their vices, my heart is filled with an inexpressible something. I well remember young men that were so weakened by the solitary vice (or by visiting places of ill fame) that they had no reserve vitality. I remember that when some of these would occasionally get drunk, good people would point to them and say, "See what drink will do." But the *real* cause was never, or at most very rarely, spoken of.

As I have followed some of my playmates to the grave, and have listened to the insane chattering of others, and knew the *real* cause, my innermost soul has cried out for some one to warn the coming generations. This is all true, notwithstanding the

neighborhood in which I was brought up was exceptionally moral. I can not tell all the particulars of how it came about, but let me say this: A bad boy visiting or sojourning in a neighborhood can and will do an incalculable amount of damage; and one family of youngsters spending the night with the young people of another home while the parents are away (or without the proper oversight if they are at home) is a most opportune time for the *destroyer* to get in his work.

And now, Bro. Root, if the enemy got in such deadly work in this way, in that day, in a community above par in morals, restraint, and carefulness, what must be the awful harvest in the near future where the young "just grow up" as they do in so many places to-day?

I often shake hands with some mere boy with signs of debauchery plainly written on his face; and how my soul longs to pour out itself in a helpful way to him! But if you have ever tried it you know how hard it is to say the right thing in the right way.

I am writing these things hurriedly, and you may have to read between the lines to get all I should like to have you get, and, again, you may not have seen the dreadful realities of these things as I have, and think I am *overdrawing* them; but "I know whereof I speak." I have been in a position where I saw cause and effect—saw the cause 30 years ago—some more, some less, and have watched the effect as some went to the grave, some to insane-hospitals, and some to a more or less wrecked manhood. I have observed, too, that so many children start in life handicapped, suffering for the sins of their parents, without vitality enough to carry them very far out into the sea of life.

But may be I had better change the subject; for if I get started I may not stop soon. But just one word more: A little over a year ago while talking to a mother in the south part of the State in regard to the "white-slave trade" and kindred things, she said, "I aim to raise my girl's right," and she meant it too; but I thought to myself, "Whom will they mate with?" Isn't it *awful* to raise girls up right and then have them mate with some depraved or "disease-ridden" man? It seems to me just now as if you may have something to say on these things in your Home talks.

A COMPASS WITHOUT MAGNETISM.

The following, from a nephew of A. I. Root, explains itself:

Dear Uncle:—As I am rather near you at present I will drop you a line. I am in good health, and also very busy, as this is a brand-new ship and needs lots of work. I am a gyro-compass man now, on board this ship. It is a very interesting instrument. I wish you could see it. It is a compass which has no magnetic effect at all. It is run by electricity—a motor which runs 8600 revolutions a minute, and runs in a vacuum. If I can get a folder on it I will send it to you. It was invented by a man by the name of Sperry, 216 William St., New York.

HOMER H. ROOT.

U. S. S. Arkansas, Key West, Fla., Dec. 21.

We clip the following from the *Cleveland Plain Dealer*:

APPROVES GYRO COMPASS; NAVAL EXPERTS CALL IT BETTER THAN MAGNETIC.

WASHINGTON, Jan. 24.—Battleship tests with the new gyroscopic, or "battle," compass, reports to the navy department to-day announced, have demonstrated that it not only is a vast improvement over the magnetic compass but that it will pay for its cost and installation within two years in the amount of coal saved. This saving would be accomplished by

cause a steadier course can be maintained by the use of the new compass, and therefore changes in speed to regain headway would be greatly reduced.

"The gyro compass is not yet wholly satisfactory, mechanically," the report confesses; "but when the remaining defects have been corrected, and it is capable of standing up to its work for long periods,

its installation on all capital ships will result in greater coal economy and in more satisfactory handling of ships."

"This last-named advantage," the report concludes, "would be especially gained when warships are steaming in squadron or were engaged in formations or evolutions."

Poultry Department

INDIAN RUNNER DUCKS; WHY THEY DON'T LAY, AND WHY THE DUCKLINGS DIE.

Mr. Root:—Will you please tell me why my Indian Runner ducks are not laying? They have not laid in almost three months. Can they be picked? My little ducks all die. What do you feed them?

Parish, Fla., Dec. 26. MRS. H. L. GILLETT.

My good friend, I don't know that I am exactly competent to answer your inquiry. All the Indian Runner ducks I have ever kept have always laid more or less. I have had no experience in picking ducks; but I understand through the poultry journals that where you want to get eggs you must not take off the feathers. The ducks can not very well furnish a crop of feathers and a crop of eggs at one and the same time. I feel sure your trouble about the ducks not laying is in the feed. Ducks must have either soft food or else grain soaked in water. I have explained several times, that I feed all my corn and other grain in a tub half filled with water. This accomplishes two things. It gives the ducks the moistened food as they need it, and water with their food, and at the same time it prevents rats or other vermin from helping themselves to the grain. Our laying ducks are fed mostly on corn and a little wheat with the corn; but as they seem to prefer the corn, that is the principal part of their diet. Now, I would vary this diet were it not for the fact that they go out in the canal every day from eight o'clock in the morning until about four in the afternoon; and in the canal they get a great variety of animal food and vegetable food along the banks. We have always fed our ducklings and little chickens bread and milk for the first three or four days, or say a week, and this milk has furnished the needed animal food. A very important thing for little ducks, and I think little chickens also, is to give them green vegetable food; and as they seem to prefer lettuce to any thing else, I would try to have some lettuce leaves ready for them when they are two or three days old. The bread and milk, of course, gives them a certain amount of animal food; but when we take a hatch off the incubator there are more or less infertile eggs, and eggs at the close of the hatch that are only partly developed. These are all boiled, and I give the little brood say an

egg a day, cutting it up fine at first to teach them to eat it. I should have said that the lettuce is also cut up in little bits until they get an appetite for it. After both ducks and chickens have learned to eat lettuce you will find that they will leave any other food when the lettuce is offered them. Some have objected that bread and milk is a rather expensive diet, especially where there are very many chickens.

Now, here is something I want to tell you all. I have had it in mind for some time. One of our bakers here in Bradentown has considerable stale bread; and especially is this true Monday morning. With the agreement that I take it off his hands, he lets me have it at the very low price of a cent a loaf. On one occasion, when he had had bad luck with his yeast or his "rising," there were over a hundred loaves that I got for a cent apiece. Now, the poultry journals advise that the bread and milk be made by first toasting the bread or drying it in an oven until it is hard and brittle. When you are ready to feed them, pour a little boiling water on it, which quickly softens up the bread. Then mix it up with milk. This baking is especially important when the bread is very old, because the strong heat kills all sorts of germs that might have been deleterious to the chicks. After the chicks or ducklings are a week or ten days old we mix in gradually a little bran and middlings, and finally their mash is bran and middlings alone, perhaps adding some Indian meal. On one occasion, when I was obliged to be absent, I left some little ducks in Mrs. Root's care; and as she had not paid very much attention to my duck experiments she gave them chick food as you do chicks; and before I got around home several of them had died. Now, this fact should be kept in mind—that ducks can not digest their food unless they have water with it. You will notice they first take a bite of food and then a drink of water, and so on alternately. When they are given dry grain some distance away, I have seen them run hurriedly a good many rods to get a drink of water, and then come back again after their grain. Running water, if possible, should be provided close by where they get their food. They can then help

themselves to their oft-needed drink. The ducklings can be fed wheat, provided it is soaked so as to be soft, after they are two weeks old. You have probably noticed that both ducklings and chickens when they become accustomed to one kind of food get it into their heads that they can't get along with any thing else, and there will be quite a little teasing if they don't have their accustomed diet.

In regard to animal food for ducks, in one of Cypher's catalogs he gives illustrations of two flocks of ducks. One had plenty of animal food from the start, and the other had nothing but vegetable food. Both flocks of ducks were hatched from the same eggs, the same in number; but at the end of several months the number of vegetarians had been greatly reduced, and they did not compare at all favorably with those that had the meat diet. From this it seems evident that ducks especially must have a considerable amount of animal food in their ration. If they do not they will suffer. Another thing, we want to be sure that they have plenty of fresh air. I think many chickens and ducks are killed by artificial heat when such heat is not needed. With what experience I have had with ducks I should say that they are the easiest fowls in the world to raise. From all the ducklings I have brought to successful maturity down here in Florida, I can remember only one that died unless it was by accident. Give them an enclosure when they are little, where no rat or wild animal of any sort can possibly get to them, then let them have their liberty, and run and enjoy life and be happy.

Just before dictating this I went out and had a look at my twelve ducklings hatched out by an Indian Runner mother, and it is wonderfully interesting to me to study a sitting *duck* and her habits and ways of managing, as well as studying a sitting hen.

POULTRY-NETTING BASKETS FOR FEEDING CHICKENS GREEN STUFF, ETC.

Since what I have said in regard to this I have made another big discovery. Listen and see if you do not agree with me. After what I said about rolling up a piece of poultry-netting, something seemed to keep saying to me that I had seen a basket somewhere that was just the thing, that we had already in use. Finally, one day in going through one of our store rooms I saw some poultry-netting hens' nests hanging up on a nail. These were bought from Sears, Roebuck & Co., at a cost of only 4 cents each, and they had never been used because they are almost too conspicuous to please the

"biddies" unless they are screened by a box or something of that sort, to make them more retiring. As I never got around to do this they remained there unused. In a twinkling I had twisted some wires around the upper edge to hang them on the poultry-netting fence, and they made just the prettiest baskets for holding lettuce and green stuff that can be imagined. In your garden you frequently have lettuce, radishes, turnips, and mustard sown too thickly. Well, when you pull out the surplus plants and throw them on the ground the chickens will just drag them around without being able to pull off the leaves so they can eat them. With this wire-cloth basket the thing worked to perfection. Put any old outside leaves from cabbage, lettuce, turnip tops, etc., from the kitchen, and all such stuff, into these baskets, and it will be eaten up perfectly with scarcely a remnant. With our convergent poultry-yards we simply hang the baskets on the outside of the fence clear around the circle; then, in order to feed the chickens green stuff, we do not have to open the gates at all. Just go around with your basket of lettuce, or other green stuff, and drop a handful over into the hens'-nest basket, and it is done in a twinkling. For little chicks, of course, you have to hang them lower; and it is one of the prettiest sights I ever saw in the poultry-yard to see an incubator flock of chickens busy at work at a great head of lettuce suspended just over their heads in one of these baskets.

While on the subject of these wire-cloth baskets I want to say that a poultry-netting *bottom* for any hens' nest is certainly a very fine thing. While visiting our Ohio Experiment Station I noted that their trap nests were all made with poultry-netting bottoms. This let all accumulation of broken straw, chaff, etc., drop down through out of the way. And, by the way, about the best material for hens' nests that I know of is soft hay. Our Bermuda-grass hay that grows down here in such profusion is just the thing. As often as the hens break it up and let the fine part drop through, some more fresh hay can be supplied. In this way the nests are always nice and clean and sanitary.

I want to say something more about lettuce. About three miles south of us is a young market-gardener who has several acres of perhaps the most beautiful lettuce that I ever saw. Well, a few days ago he told me that if I would come down with my auto and get it I might have all the lettuce I wanted. That is, by selecting heads that were not fit for shipment I could probably

get all my fowls could consume. Accordingly I went down, and almost immediately after feeding plenty of lettuce in these wire-cloth baskets we had a great increase in eggs. One reason for this is, perhaps, that my chickens hadn't been getting *enough* green stuff, or such green stuff as they particularly preferred; and I find, by experiment, that there is nothing in the *whole round* of vegetation that pleases chickens like the nice head lettuce grown here in Florida. They will not only leave the grain but they will leave the meat scraps from the butcher's in order to get this lettuce, and just the sight of the great nice heads of lettuce seems to set them to singing. In fact, as soon as they see me approach with a big bundle of lettuce they all run for me as they do for nothing else. I believe it would abundantly pay every poultry-keeper (at least on any considerable scale) to grow lettuce especially for his fowls. Mustard may answer just as well, or better, on account of its pungency; but I haven't been able as yet to ascertain this fully. But the wire-netting baskets I have been speaking of are certainly the finest things in the world to feed mustard leaves, or leaves of any thing else, for that matter. The lettuce mostly grown here for shipping to the northern market is what is called the "Big Boston." This makes heads like heads of cabbage; and even the smallest chickens, when only a few days old, will learn the trick of eating out every particle of these large heads, especially if they are placed for them so they can get at them like the poultry-netting hens' nest I have been describing. I presume you can buy these hens' nests at almost any hardware store, but perhaps not quite as cheaply as the price I have mentioned. The little Indian Runner ducks seem just as greedy (if not a little more so) for the lettuce as do the chickens; and I am sure it conduces very largely to their health and growth. Aside from the egg-laying and the increased health by the use of plenty of lettuce, it is worth a good deal to have something that will make your wild untamed fowls tame and good-natured—even the crazy Leghorns that attempted to run clear off the premises without any adequate provocation. When they come to learn to eat lettuce they will get around you and become tame in short order—that is, after they once get a taste of the lettuce they seem to value so much.

HENS' NESTS; IMPORTANCE OF SHADE.

By the way, there is one serious objection to the hens' nest that I pictured last summer when I was describing and planning the convergent poultry-yard. The nest, as

I have it, is all right during cloudy days; but when the Florida sun comes down very hot on those sloping roofs it gets so warm inside that the hens go somewhere else to lay their eggs; and their old nests that were previously provided for them under the roofs where they roost at night seem to be much preferred during the hot days, especially in hot weather. There are two reasons why I don't like a hen's nest on the ground. First, the hens seem to like to climb up to some place to lay their eggs, perhaps to get away from "varmints," and also have some privacy; and, secondly, it is hard work for an old man to go around to very many nests and stoop over every time. When the nest is raised up a convenient distance from the floor this is done away with. The nests should be of easy access to both the hens and the owner. The nests should also be dark; for I am satisfied a dark nest is a great preventive of the habit of eating eggs. Besides, a hen on the nests greatly prefers to be where she is not easily seen by any one who happens to pass by. I would have the opening whereby she gains access turned back the other way from where the attendant is likely to pass.

SOME MORE "STRAWS" THAT "SHOW THE WAY THE WIND IS BLOWING."

The following clippings from the Baltimore *Sun* show progress surely. Behind the bars is the proper place for a drunken chauffer. Long live Gov. Sulzer.

BAN ON DRUNKEN CHAUFFEURS; GOVERNOR SULZER SIGNS BILL PROVIDING FOR THEIR PUNISHMENT.

ALBANY, N. Y., Jan. 16.—"I don't think we ought to countenance drunken chauffeurs. Sober ones have hard work in dodging pedestrians."

Thus spoke Governor Sulzer to-night as he signed his first law as Chief Executive of the State. The new law provides one year's imprisonment or a fine of \$500, or both, as punishment for an intoxicated chauffeur operating a car.

A FREIGHT-CAR CONDUCTOR QUOTED AS SAYING THAT TWO-THIRDS OF ALL RAILROAD WRECKS DUE TO NEGLIGENCE ARE CAUSED BY DRINK.

TO THE EDITOR OF THE SUN—*Sir*: In his admirable letter on railroad accidents published in to-day's *Sun*, Mr. Torsch fails to mention the most frequent cause, to wit, drink. A freight-car conductor said to me yesterday that two-thirds of all wrecks resulting from mistakes or negligence were really caused by drink. He said he had seen many wrecks; and, with the exception of those caused by broken rails and wheels, they were nearly all caused by drink.

By drink he did not mean drunkenness, which is a rare vice nowadays among railroad men, but that lethargic state of mind which results from so-called moderate drinking, and which is produced in some men by one drink of liquor. He said there is little drinking among railroad men while on duty, but there is nothing to prevent them from coming to their work after taking one or more drinks.

Baltimore, Dec. 18.

ONE WHO KNOWS.